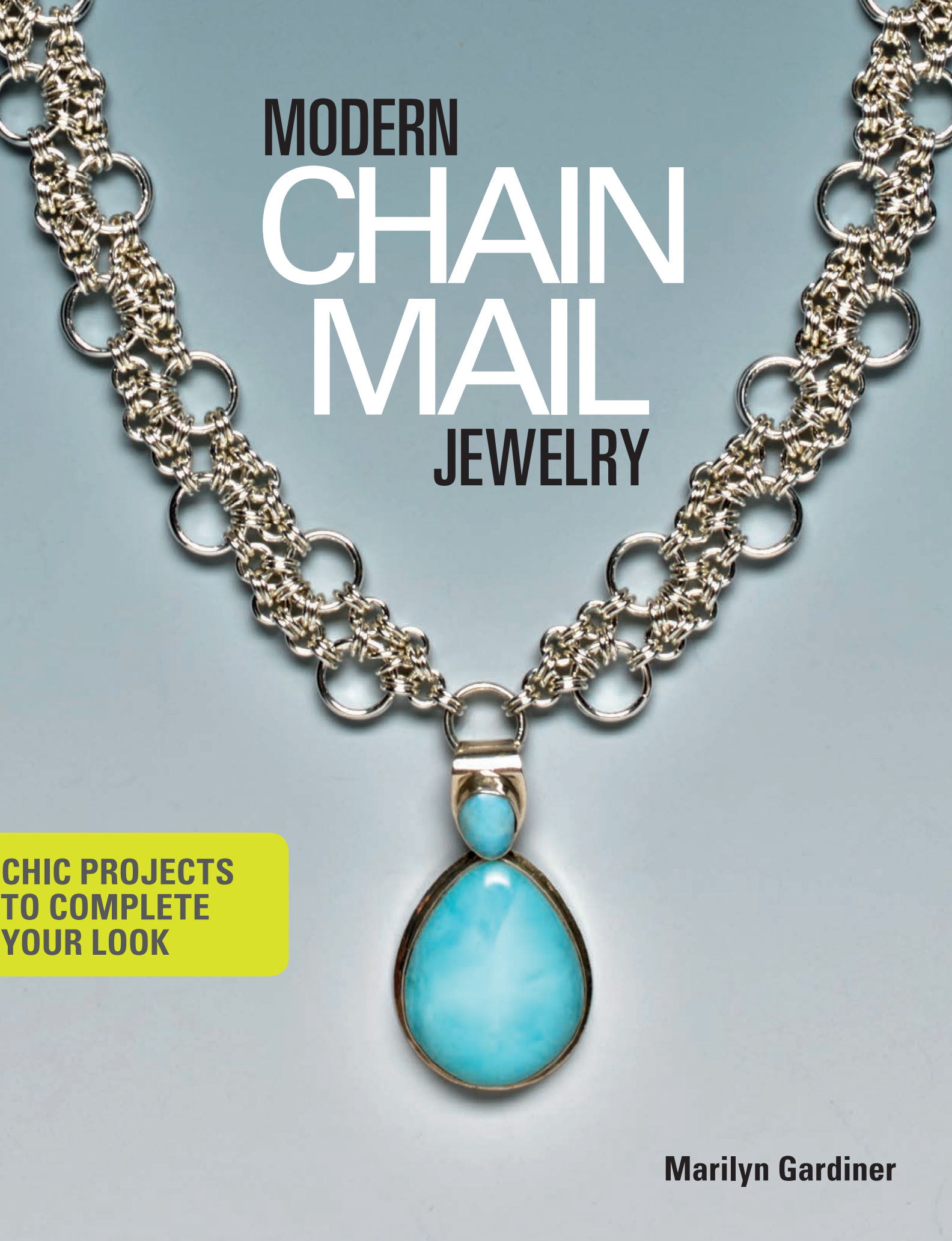


A silver chainmail necklace with a large teardrop turquoise pendant. The necklace is made of interlocking rings, and the pendant is a large, teardrop-shaped turquoise stone set in a silver frame. The background is a light blue-grey color.

MODERN CHAIN MAIL JEWELRY

**CHIC PROJECTS
TO COMPLETE
YOUR LOOK**

Marilyn Gardiner

MODERN **CHAIN** **MAIL** **JEWELRY**

Marilyn Gardiner



WAUKESHA, WI

Kalmbach Books

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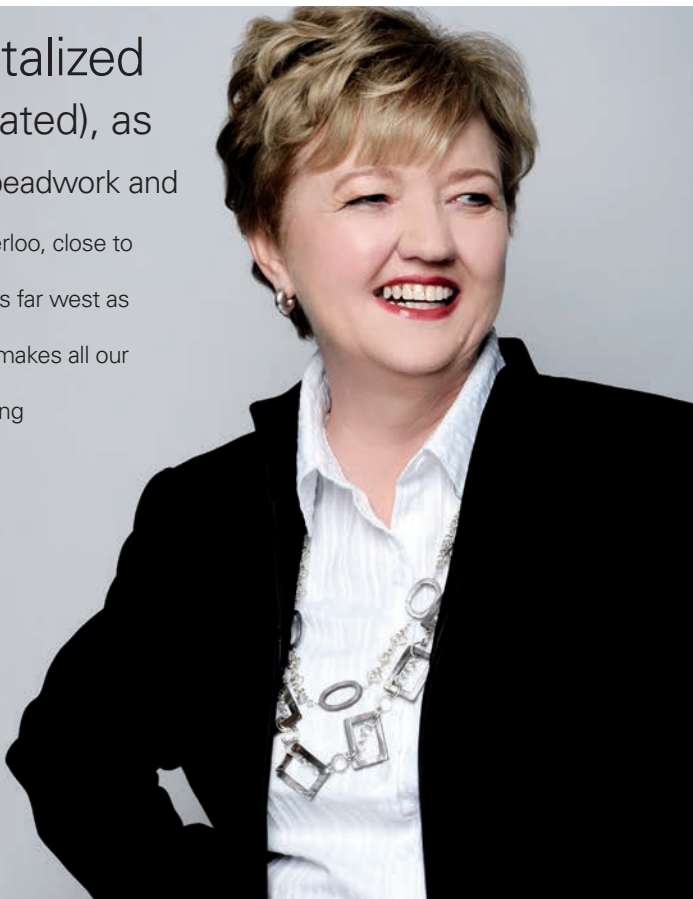
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INTRODUCTION

I'm a retired teacher, revitalized (reconstituted, reborn, reincarnated), as a jewelry designer and teacher of beadwork and chain mail classes. I'm a Canadian based in Waterloo, close to Toronto, Ontario, and I have taught classes in Canada as far west as Calgary AB and to the east in Halifax NS. My husband makes all our jump rings, assembles my kits, and transports everything to shows. We winter in Tucson Ariz., and I teach at the shows there, in Texas, in Milwaukee Wis., and in Buffalo N.Y.

When I get dressed in the morning, I need to put on both clothing and jewelry. Both need to work together and make me feel good—prepared to meet my day—whether it be for work or pleasure, at home or away.

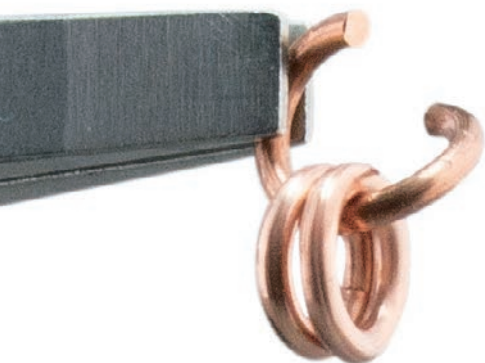


When I create jewelry, I keep a few guidelines in mind.

Experimentation. “What if...” experimentation underlies most of my projects. I believe that everyone can be creative if they give themselves permission to play. I believe that anyone can create jewelry that makes him or her look and feel special in any environment.

Instructions. Quality instructions are very important to me. I don't want a learner to be left wondering if they're doing it right, or not knowing what the next step is. Both the words and pictures I use must work together. I love teaching, and my students' experiences help to continuously improve my instruction.

The right way to make chain mail. For me, there is no ONE, right answer to a question; no BEST way to do something. Here are some chain mail examples: Which pliers should I use? How should I hold my pliers to open and close jump rings? How do I make a wrapped loop? What is the correct way to do this weave? You'll learn my methods and



my solutions to these questions. They've been developed over many years working on my own and working with students—but I'm still learning, trying new things, and changing my mind about MY best way. You will need to experiment to find YOUR best way to do things.

Quality work trumps speedy work. That means continually striving for perfectly closed jump rings that have as few marks from pliers as possible. It also means neat wirework, thoughtful design, and jewelry that is comfortable to wear.

Chain mail weaves as components. In my mind, chain mail weaves are design components to be played with. They can be combined with other weaves, with beads, and with other metal components. They can be the star of a design, or a supporting player.

If you think about chain mail elements as building blocks or components (such as a Butterfly, a Möbius, a Byzantine Knot, a Chinese Knot, or a Celtic Star), this encourages you to think about chain mail in a different way—it's not just about making a long chain!

Why I wrote this book. I want to encourage you, the reader, to make jewelry that is personal and pleases you, and to explore possibilities as you learn a new weave. The different weaves can look subdued, elegant, casual, dressy, assertive, or playful—it all depends on your choice of metal, ring sizes, embellishments and design. The wonderful thing is that YOU get to choose and to play.

What's in the book

Of course this is a book full of projects—but I've tried to make it more than that. When I teach a class that is project-based, I start off with an overview discussion of tools, measurement, resources, and working conditions—so I've included some of that information here.

Also, when I teach a class, I try to accommodate a range of learning styles. As you know, most people learn in a variety of ways, but each person usually has a strength, whether it's listening, watching, or reading about how to do something. In this book you can't actually hear me or watch me, but the photos I've taken illustrate each step, and the words I've written describe carefully how to do each step.

At the beginning of a project, I like to give an overview of the steps along the way to arriving at a finished piece of jewelry. Each project in the book has a strategy section with a **step-by-step action plan** (pictured at right). This lets you know exactly what you're going to need to do to complete the project so you can plan your jewelry making session.

I want this book to be a useful reference tool that would earn a space on your bookshelf. You might only make one or two of the projects, but my wish is that you will return to the **section of weaves and techniques** when you create other pieces.

As I was designing the projects, I focused on six themes that work well with chain mail. You'll notice necklaces with pendants, necklaces with flat mesh, necklaces with a center focus, necklaces with linked segments, multistrand necklaces, and asymmetric necklaces.

Many instructions are followed by an **Explore and Experiment** section. It includes suggestions for modifying the design or specific instructions for making a bracelet or earrings that coordinate with the necklace. In this section I strongly encourage you to play with the weave and with different strategies for embellishments.

Plan of action:

- ☐ Make the main chain
- ☐ Attach the clasp
- ☐ Wire wrap the pendant bead
- ☐ Make the front bead components
- ☐ Attach the pendant
- ☐ Make adjustments
- ☐ Attach the four side dangles
- ☐ Make adjustments
- ☐ Explore and experiment: make a bracelet and earrings

ESSENTIALS FOR MAKING CHAIN MAIL JEWELRY



Tools

To open and close jump rings you need two pairs of pliers. Sounds easy—but wait—there's more!

Pliers found in the hardware store have ridges along the inside surface of the jaws. You definitely don't want those because they leave marks on softer metals.

There are pliers found in craft shops that are meant for occasional use in jewelry making—they are light-weight, usually have short handles, and are great to carry around in a small toolbox. You don't want those because the light weight means they will likely slip when you try to get a solid grip on a jump ring, and the short handles will dig into your palm—resulting in a very sore hand after a period of extended use.

With pliers most often used to make chain mail, there are still many choices. The ones I use the most are flat-nose pliers. I like the stability of the grip on the ring they provide. And I like the fact that the flat nose distributes the pressure over more of the ring's surface—and is less likely to leave a mark.

I also use chainnose pliers, or the tips of bentnose pliers, when I have to reach into a tight spot to close a ring. They are also helpful when a ring you need to close is filled with other rings, leaving very little space to maneuver the ends closed.

Some people prefer chainnose or bentnose pliers. And that's OK because the real test is whether your tool choice works for you personally and whether it enables good ring closures and quality workmanship.

If you are just starting out, try using what you have, or buy a couple of pairs of inexpensive pliers that are suitable for chain mail (pictured at left). Look for long handles. Look for reasonable heavy weight pliers. Decide if you want plain vinyl handles or padded ones or molded rubber ones. Ask your local craft store if you can try some out in the store. Talk to vendors at craft shows. Ask questions at your bead group meetings.

If you decide you enjoy making chain mail projects, then it may be time to invest in some quality pliers. I really like Tronex pliers because they are a quality tool made in the United States (center). The long, ergonomic handles fit my hands nicely, and I don't have to exert a lot of pressure to keep a secure grip on a jump ring. I regularly use the flatnose with a short jaw, the flatnose with a short wide jaw, and the chainnose pliers.

Additional tools: If you add beads to your chain mail, then you will also need cutters for cutting wire, round-nose pliers for making loops, and crimping pliers for adding crimps to flexible beading wire. These tools also come in a range of prices and quality (pictured at right). Get the basics, and then decide if you want to invest in better ones.

Workspace

You can work almost anywhere! You just need tools that do the job and a flat surface to set out your rings. I work at a table in my studio, on a lap desk in the car, and many places in between. My recent discovery is a flexible mouse pad that has a no-slip foam bottom and a bright blue fiber surface—it makes a great mini work surface that travels well. There's also a large version of the mat (20x15 in.) that I use on my work table.

Good vision

You need to be able to see well. That means decent lighting and some form of magnification to see if each ring has been closed tightly.

The lighting can range from a battery powered, portable light to a plug-in task light, to an Ott brand floor lamp. The magnification can range from drugstore reading glasses to an Optivisor that sits on your head, to custom Craft Optics telescope eyeglasses. I've tried all of these—and they all work.

Organization

When you do craft work of any kind, you soon acquire a lot of "stuff" that needs to be organized in some fashion. Here are some of my solutions to this perennial problem.

Quart size zipper bags (labeled) contain all my findings, beads and spools of craft wire.

Gallon size zipper bags (labeled) hold instructions, sketches and materials for every project in process. When a project is completed, the bags (without any supplies) get filed in my filing cabinet.

Plastic boxes from the dollar store hold the quart bags of supplies. These boxes fit on open bookshelves.

Cardboard file boxes from an office supply store hold the gallon bags of projects in process. (Yes, I have so many I need boxes!) They stack under my worktable.

A cabinet with doors holds supplies such as labels, computer paper, file folders, and more.

Bookshelves also hold plastic boxes of supplies, reference books, catalogs, trays of jewelry samples, trays of special beads, and photography supplies and props.

A rolling drawer unit fits under my computer desk and it holds sticky notes, envelopes, stamps, note pads, pens, markers, paper punch, stapler, calculator, binder rings, and paper clips.

Wooden racks hold my pliers—the kind where the ends of the handles fit into holes in a block of wood.

My stash of jump rings is contained in EZ Locking Caddies and carry bags by Craft Mates. Each caddy has 14 compartments. To open a lid, you have to push a button and lift the lid at the same time. This helps



prevent accidental messes. A carry bag holds up to seven caddies.

ABOUT JUMP RINGS

Should you buy them or make them? Buying rings is a good way to start out. It ensures well-made rings with smooth cut ends that will fit together perfectly, and be the correct size and gauge for the weave you want to make. It also means that you don't have to invest in equipment and wire until you decide that you need to be able to custom make your rings.

What metal should you choose? It depends on many factors: your budget; if your project is for you, for a gift, or to sell; and your taste—do you prefer silver, bronze, copper, gold-filled, rose gold, or colors such as those found in anodized aluminum or niobium, or enamelled copper? There's a world of choices.

Buying rings for project tutorials: You must start with the ring sizes and gauges specified in the tutorial if you want the results to be a success. You can't just substitute any ring you happen to have in your stash.

Measuring wire gauges: The most common method to measure wire thickness is a gauge system—either the American Wire Gauge system (AWG) or the British Standard Wire Gauge System (SWG). The AWG system is typically used for precious metals and the SWG for ferrous metals. There are reference charts available that specify in millimeters or inches the thickness of wire in either measurement system. In this book, all the wire gauges used are AWG. In both systems, the lower the number, the thicker the wire—so 14-gauge wire is thick, and 20-gauge wire is much thinner.

Measuring ring sizes: To make a jump ring, wire is wound around a metal rod to make a coil. Then it's cut with a saw along the length of the coil—and the jump rings fall off. What's important in chain mail is the diameter of the rod that was used to make the rings. If a rod that measures 4mm across was used, then the inside diameter (ID) of the resulting jump rings is 4mm.

Imperial vs. metric: Here's another quirk. Some rods are measured in fractions of an inch, and others are measured in full, half, or quarter millimeters. Not knowing the gauge system of your rings could inadvertently cause confusion or error as you purchase supplies or make a project.

If you are unable to find rings in the gauge system of the instructions you are following, you can do the math and change from one gauge system to another. As well, you can learn about Aspect Ratio (the relationship between a ring's diameter and wire gauge) and deliberately choose to use a heavier or lighter wire (and the resulting different ring sizes) than called for in the project.

Aspect Ratio

Compare the Byzantine Dangles Necklace (p. 44), Byzantine with 18-gauge rings, and the Byzantine Drama Necklace (p. 73), Byzantine with 16-gauge rings.

To determine the aspect ratio, start with what you know. Let's say you know that 18-gauge, 3.5mm ID jump rings make an attractive, compact, Byzantine weave, but you desire a heavier weight chain and want to use 16-gauge rings.

Before you can do any calculations, the thickness of the wire and the ID of the rings must both be in the same measurement system. Look up 18 gauge and see that it's 1.024mm. Then look up 16 gauge and see that it's 1.291mm.

The first calculation is to find out the Aspect Ratio for the ring size you that know works well for Byzantine.

$$\text{AR} = \frac{\text{ID}}{\text{WD}} = \frac{3.5}{1.024} = 3.42$$

Now you want to find the ID for a 16-gauge jump ring. Cross multiply, and

$$\text{ID} = \text{AR} \times \text{WD} = 3.42 \times 1.291 = 4.42 \text{ mm}$$

This result tells you that a 4.5mm ID should work. In fact, that's exactly the ring size I used in the Byzantine Drama Necklace.

The next task might be to find out what ring size to use for a delicate, 20-gauge Byzantine chain. I found out that 20 gauge = .8128mm thick.

$$\text{ID} = \text{AR} \times \text{WD} = 3.42 \times .8128 = 2.78\text{mm}$$

That tells you to try 20-gauge, 2.75mm ID jump rings. (And yes, it makes a lovely chain!)

Jump Rings

Open a ring

1 Use two pairs of pliers to hold the sides of a jump ring with the opening at the top (12 o'clock). Flatnose pliers provide more leverage, are easier on the wrist, and are less likely to mark the metal.

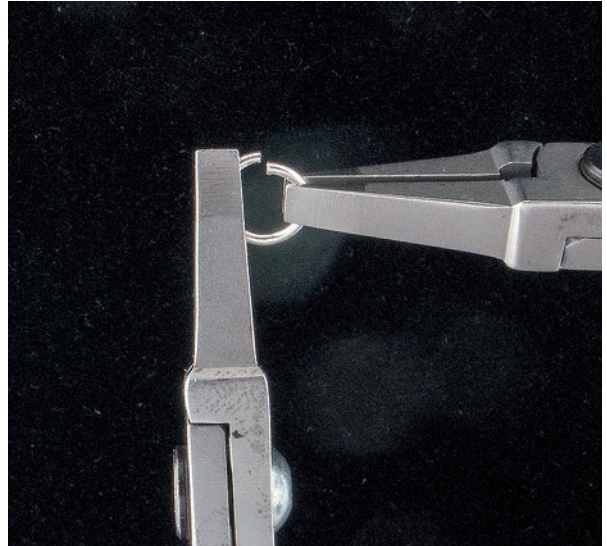
2 Use the left pliers to hold the side of the ring steady, and use the right pliers to turn that side of the ring towards you. (Reverse this if you are left-handed.)

Close a ring

3 Use two pairs of pliers to hold the sides of a jump ring with the opening at the top (12 o'clock).

4 Bring the ring ends back together by rotating the wrist of your dominant hand and exerting a bit of inward pressure. I often hear a "click" as the ends touch. The goal is to have the two ends lined up exactly, with no space between them.

5 Move the ends back and forth by small amounts to adjust the fit. To get a tight closure, you may need to also push the pliers inward as you rotate them back and forth. If you go a bit past the even point, and let go of the ring, it will spring back and match exactly. Spend the time to close each ring carefully—this is the mark of a professional finish.





BUTTERFLIES IN BLACK AND WHITE

Linked Butterfly segments are accented with a lovely heart bead from glass bead artist Susan Stortini of Toronto, Canada. The black and white dimensional dotted design on the heart is repeated in the black and white beaded dangles.

Plan of action:

- ❑ Make the Butterfly components
- ❑ Link them together
- ❑ Attach the clasp
- ❑ Wire wrap the pendant bead
- ❑ Wire wrap the dangles
- ❑ Add the dangles to the pendant bead
- ❑ Attach the pendant
- ❑ Add the teardrop beads
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

WEAVE

Butterfly weave

DIMENSIONS

23 in. with a 3½-in. pendant

MATERIALS

Jump Rings

- **54** 16-gauge 6mm ID jump rings (Möbius centers)
- **356** 18-gauge 4mm ID jump rings (wings and connectors)
- **5** 16-gauge 3mm ID jump rings (clasp)
- **13** 18-gauge 2.5mm ID jump rings (dangles)
- **14** 18-gauge 6mm ID jump rings (teardrop beads)

Beads and Findings

- 34x34mm pendant focal bead
- **14** teardrop beads, coordinating color with focal (Unicorne Beads)
- **20** (approximately) assorted small beads (4–6mm) for the dangles
- 4½–5 in. 20-gauge round silver wire
- **6** 2-in. silver headpins
- silver toggle clasp (Somerset Silver)

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers
- flush cutters

1

Make the Butterfly components

Review the Butterfly weave instructions (p. 88). Follow steps 1–8 and make 18 components.



Link them together

Open four small rings. Place two Butterfly components end to end. Insert one ring through the two end rings (the pair in the middle—the “bread slices”) of each segment and close the ring. (The red dots on the photo show the spots to insert each ring.) Repeat for the other segment. (Only pass through the top and bottom rings at the end of the segment.) Hold an open ring with your pliers, and add the end rings you just added. Close the ring. Place a second ring through the same two rings. Repeat this step to continue joining the segments together to make the necklace.



Attach the clasp

Review the technique to attach a toggle clasp (p. 110). Open five 16-gauge 3mm jump rings. Use four rings to attach the bar and one ring to attach the ring.

Note

These jump rings are round, sterling silver wire. The 16- and 20-gauge wire is half-hard. These ring sizes also work for Argentium silver and 10% silver filled. For copper, use 16-gauge 6mm ID and 18-gauge 4.25mm ID jump rings.

TIP

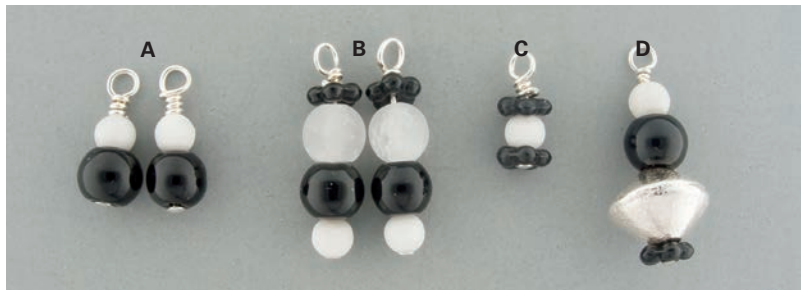
Each segment is about 1¼ in. Keep this in mind when calculating your finished length.

2



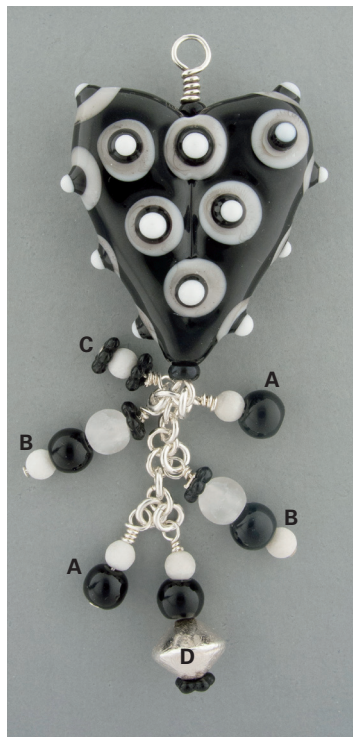
Create the pendant

Make a simple loop at the end of the wire. String the focal bead, and make a wrapped loop above it. If desired, add a small spacer bead at the top and/or the bottom of the focal bead before making the loops.



Create the dangles

Collect the small beads that coordinate with the colors of your focal bead. Arrange them in different combinations on the headpins until you find combinations that please you. Make a wrapped loop at the top of each dangle.



Add the dangles to the pendant

Open seven 18-gauge 2.5mm jump rings. Add one to the loop beneath the focal bead. Link the rest of the rings to make a 2-in-1 chain. Open six more 18-gauge 2.5mm rings, one for each dangle. Attach each dangle to the short chain with a ring in a staggered placement.

3



Attach the pendant and teardrops to the necklace

At the center of the necklace, attach the pendant to the middle rings joining the two Butterfly components by opening one ring. String the top loop of the pendant and close the ring. Repeat with the other ring. Open the 18-gauge 6mm jump rings. On each side of the pendant, attach a teardrop bead to the center of a component with a 6mm ring. Attach a teardrop bead to the pair of rings that join two components. Repeat to add equal numbers of teardrops to each side.

Make adjustments

Make the necklace longer by adding Butterfly components in pairs. Each pair will add 2½ in. to the length. Each component requires three large rings and 20 small ones.

EXPLORE AND EXPERIMENT



Earrings

A single component attached to a decorative earring finding makes an elegant earring.

Here, I've used a Bali silver lever-back finding from Nina Designs. Experiment with different earring findings. Or, substitute a top-drilled crystal or wire-wrapped dangle on the bottom rings.

Bracelet

For a more delicate silver chain for the bracelet, use 18-gauge 5mm ID and 20-gauge 3.25mm ID rings. If you prefer copper, use 18-gauge 5mm, 20-gauge 3.5mm ID. Link them together the same way as the necklace, and add two teardrop beads through the centers of each segment, one on each side.

Another option is to link the segments together directly, one to the next, with just a pair of rings. Place them side by side (instead of end to end) and connect the rings that stick out at the sides. Or, alternate the Butterfly component with another weave component—for example, a Byzantine or Chinese Knot.



CARIBBEAN GREEN

A necklace of linked Möbius segments is accented with a long dangle featuring a Swarovski rivoli set in a beaded frame. The dangling Möbius balls on the pendant are repeated in single dangles along the side chains. While some artists link one Möbius directly into the next, I prefer to link the balls with three pairs of small rings.

WEAVE

Möbius

DIMENSIONS

18 in. with a 2-in. pendant

MATERIALS

Jump Rings

- **204** 18-gauge, 6mm ID jump rings
- **194** 18-gauge, 4mm ID jump rings
- **6** 16-gauge, 3mm ID jump rings

Bead

- 12mm Swarovski Elements rivoli, vitrail medium

Other

- round link frame, antique copper, Tierra Cast (beaded, rope, or plain edge)
- toggle clasp, copper

Glue

- G-S Hypo Cement, E6000, or Two-part Epoxy

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)

Note

The jump rings for this project were made from round, fully hardened copper wire. These ring sizes also work for Argentium silver, 10% silver filled, jeweler's bronze, and enameled copper wire.

Plan of action:

- ❑ Glue the rivoli into the frame
- ❑ Make the Möbius components
- ❑ Link components together
- ❑ Attach the clasp
- ❑ Create and attach the center dangle
- ❑ Attach the four side dangles
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

1

Glue the crystal into the frame

Following the manufacturers directions, glue the rivoli into the frame and set aside to dry. You might find it helpful to use a toothpick to spread the glue.



Make the Möbius components

This necklace is built with Möbius ball segments. Review the Möbius Ball weave instructions (p. 104). Follow steps 1–8 and make 34 Möbius balls in total. (Use the 16-gauge 6mm and 4mm jump rings.)



2



Link components together

Open 54 4mm rings and arrange them in pairs. Place two Möbius balls side by side. You are going to insert a pair of rings through two small rings of one ball and two small rings of the second ball **a**.

Hold an open ring with your pliers, and add two small rings from one segment and two small rings from the other segment. Close the ring. Add a second small ring through the same four end rings. Continue joining a total of 28 Möbius balls together to make the necklace **b**.

3

Attach the clasp

Review attaching clasps (p. 110). Open the six small, heavy jump rings (16 gauge, 3mm). Use two jump rings to connect the pair of small rings at one end of the necklace to the ring part of the clasp. Use four jump rings to attach the other end of the necklace to the bar part of the toggle.



4

Create and attach the center dangle

Remove two small rings from the first Möbius ball. Open four small rings. Find the center point of the necklace. Use two small rings to connect one loop of the framed rivoli to the pair of rings at the center of the necklace. Attach the first Möbius ball to the other loop of the framed rivoli crystal with two small jump rings. Attach the second Möbius ball to the one you just added using two small jump rings.

Attach the four side dangles

Remove two small rings from each of four Möbius balls. Use two pairs of rings to attach each ball to the necklace so there are two balls on each side of the center dangle. Each one will sit between two Möbius balls of the necklace.

Make adjustments

Increase the length of the necklace in 1¼-in. increments by adding one Möbius ball on each side.

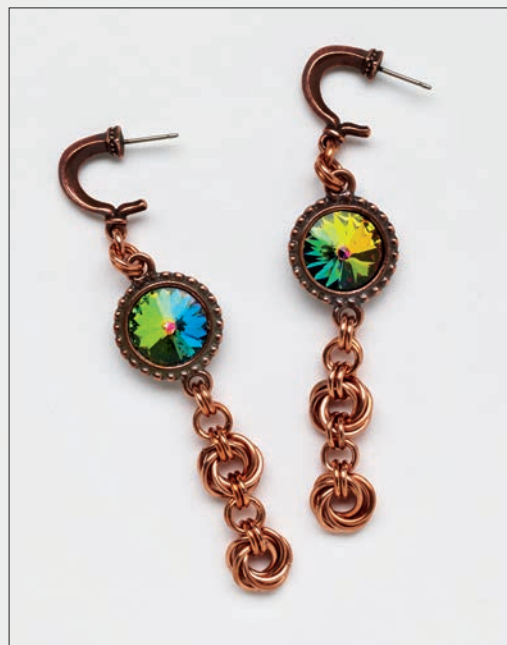


Because you have a center dangle, you will need an equal number of balls to keep both sides of the necklace the same length. Each additional increment will require 12 more large jump rings and 12 more small jump rings. The toggle clasp adds about 1 in. to the length.

EXPLORE AND EXPERIMENT

Earrings

Now for the dangly earrings! Each earring has an earring post, a framed rivoli, and two dangling Möbius balls. You might want a different earring finding (earring wire, leverback, or clip on). You could decide to omit the rivoli and just use one or more Möbius balls. Or, you could make them even longer with more Möbius balls. You have design control!



Bracelet

I decided I wanted a heavier looking bracelet (16-gauge 7.5mm and 4.5mm rings) to wear with the necklace—though YOU could decide to use the same gauge and ID as the necklace. I chose three framed rivolis, but you could use more, fewer, or none. I also decided to use a snap clasp instead of a toggle because it takes up little space, is very secure, and is easy to put on and take off without assistance.



AUTUMN FILIGREE

This Byzantine filigree weave is wide enough to provide the visual weight for a large, raku ceramic pendant from MAKU Studio. The complexity of the weave works well with the abstract colors and texture of the pendant. Pearls and copper beads add exciting embellishment. The wide filigree chain extends from the pendant to the collar bone, then changes to a single chain of Byzantine from there to the clasp.

WEAVES

Byzantine, Byzantine Filigree

DIMENSIONS

22½ in. with a 2-in. drop pendant

MATERIALS

Jump Rings

- **75** 18-gauge 6.5mm ID jump rings
- **767** 18-gauge 3.5mm ID jump rings
- **14** 18-gauge 6mm ID jump rings (back chain)
- **5** 20-gauge 2.75mm ID (pearls)
- **5** 20-gauge 5mm ID (front of pendant)
- **4** 16-gauge 3mm ID jump rings (clasp)

Beads and Findings

- **10** 10x5.5mm copper donut/saucer beads, large hole
- **5** 3mm diameter copper beads, round
- **5** 7–8mm diameter iridescent pearls
- 2-in. commercial chain with soldered links large enough to hold five of the 18-gauge 3.5mm jump rings
- 18 in. 26-gauge soft copper wire (must fit the pearls)
- antique copper toggle clasp

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- chainnose pliers
- roundnose pliers
- wire cutters
- metal ruler
- chasing hammer and bench block or anvil (optional)

Plan of action:

- ❑ Make the Byzantine Filigree and side sections
- ❑ Add the Byzantine back chains
- ❑ Prepare and add the pendant to the side sections
- ❑ Attach the clasp
- ❑ Wire wrap the pearls
- ❑ Add the dangle to the pendant
- ❑ Add the pearls
- ❑ Add the large copper beads
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round, fully hardened copper wire. These ring sizes also work for Argentium silver, 10% silver filled, jeweler's bronze and enameled copper wire.

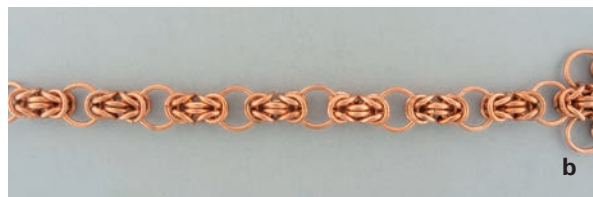
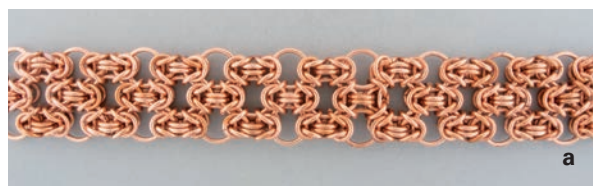
1

Make the Byzantine Filigree sections

Review Byzantine Filigree weave (p. 89). Begin the side chains by making two lengths of Byzantine Filigree weave. Using 18-gauge 6.5mm and 3.5 jump rings, follow steps 1–8 and make two sections, each with 10 Byzantine segments along the outside edge and 11 segments in the middle column **a**.

Add the Byzantine back chains

The back sections are created by adding one row of Byzantine weave variation to each section of Byzantine Filigree. Use 18-gauge 3.5mm (S) and 6mm (L) rings for this chain. Review Byzantine weave (p. 88). Start the chain in step 1 by adding two pairs of S rings to the large ring at one end of a Byzantine Filigree side section. Follow Steps 2 and 3 to make the first half segment. Follow step 4. Repeat Byzantine weave steps 2–4, but use one L ring to lock the fold in place.



Continue the pattern of beginning and ending each full Byzantine segment with a large 6mm jump ring. Make seven Byzantine segments **b**.

Repeat Byzantine weave steps 2–4 to make a second back chain connected to the remaining Byzantine Filigree side section.

2

Prepare and add the pendant

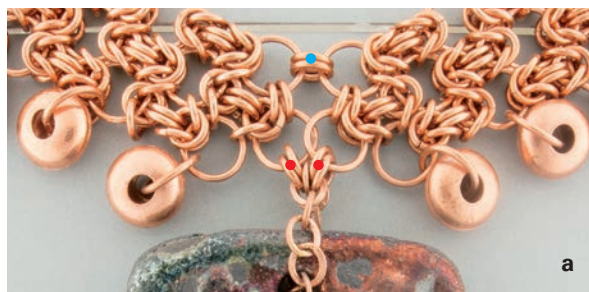
If your pendant has a loop, you're all set. If not, you might have to wire wrap it or attach a bail—but it needs some way to connect to the chain. My pendant had a hole (front to back) near the top. I took a short piece of commercial copper chain with small links and cut a piece that fit through the hole. Bring the end links together at the top of the pendant, and join them with five 18-gauge 3.5mm jump rings.

Open the large jump ring at the end of one Byzantine Filigree section (the one in the middle), add the first two of the five rings added in the previous step, and close the ring. Open the corresponding large ring at the end of the other Filigree section and add the last two of the five rings and close the ring (red dots).

Join the large rings at the ends of the filigree sections with two 18-gauge 3.5mm rings **a** (blue dot). This makes a V-shape necklace joined above the pendant.

Attach the clasp

Review how to attach a toggle clasp (p. 110). Use a 16-gauge 3mm jump ring to attach the toggle ring directly to the large ring at the end of the Byzantine



back chain. Use three 16-gauge 3mm rings to attach the toggle bar to the large ring at the opposite end of the Byzantine back chain **b**.

3

Wire wrap the pearls

Review how to make a wrapped loop with a spiral (p. 108). Wire wrap five pearls **a**.

Add the dangle to the pendant

Build the dangling chain: Open five 20-gauge 5mm jump rings and string a 3mm copper bead on each one. Hold an open beaded ring in your pliers, go through a link in the chain right above the hole in the pendant bead, and close the ring.

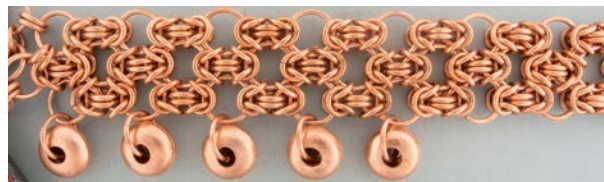
Link the four remaining beaded rings one into the next, to make the dangling chain **b**.



4

Add the pearls

Open five 20-gauge 2.75mm jump rings. Pick up an open ring in your pliers, string the loop of a pearl and the last ring of the dangling chain, and close the ring. Repeat to add two pearls (one on each side) to the top and middle jump rings of the chain.

**Add the large copper beads**

To add a copper bead, you will need a jump ring that is large enough to pass through the bead's hole and then close with some clearance. For my beads, 18-gauge 6.5mm rings worked perfectly. Open 10 18-gauge 6.5mm jump rings. Add a copper bead to the large ring at the lower edge of one side of the necklace. Repeat to add beads to each of the first five large rings. Repeat on the other side of the necklace.

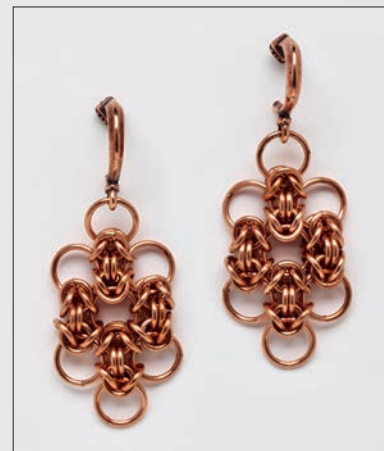
Make adjustments

Increase the length in 1¼-in. increments by adding one Byzantine link on each side. Each additional increment will require two large jump rings and 20 small jump rings.

EXPLORE AND EXPERIMENT

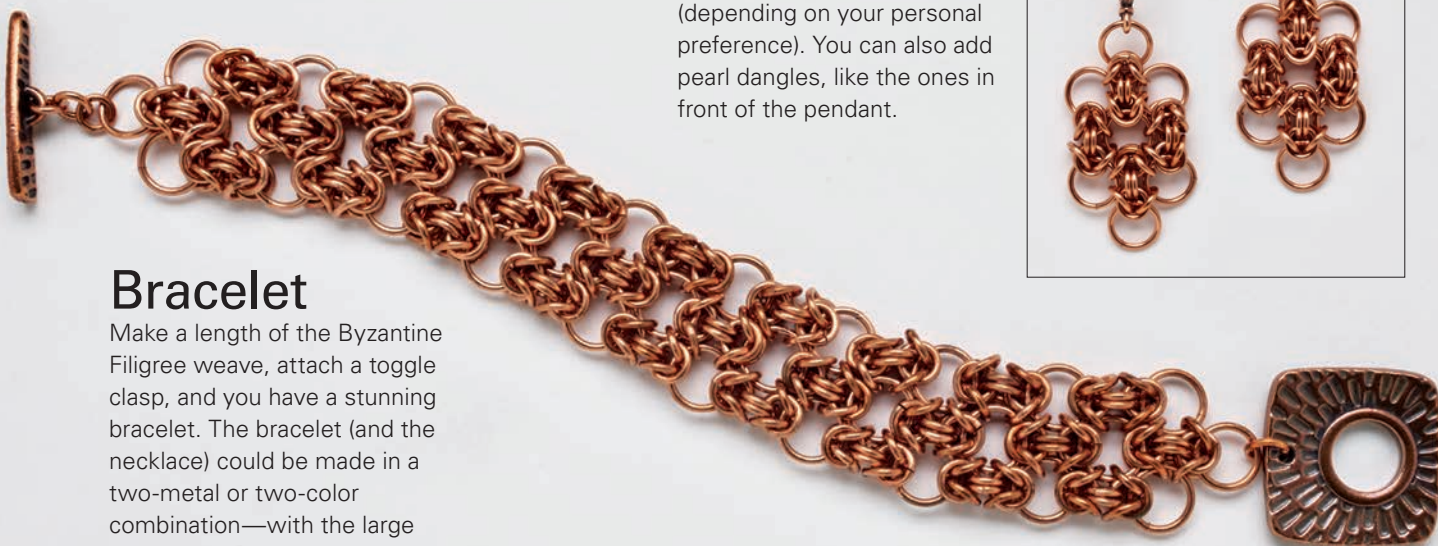
Earrings

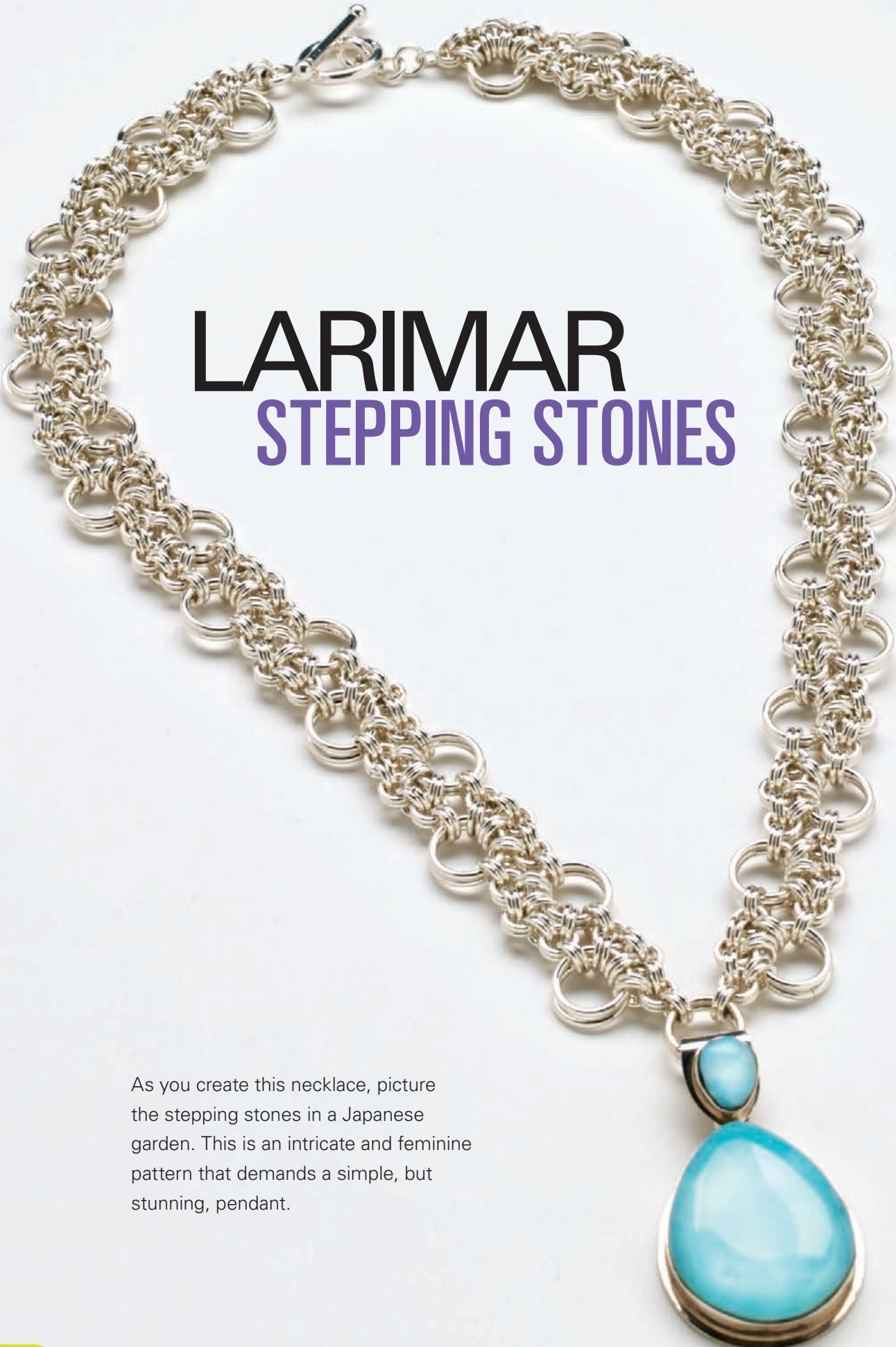
Use the Byzantine weave instructions outlined in step 1 to make each earring two or three or more segments long (depending on your personal preference). You can also add pearl dangles, like the ones in front of the pendant.



Bracelet

Make a length of the Byzantine Filigree weave, attach a toggle clasp, and you have a stunning bracelet. The bracelet (and the necklace) could be made in a two-metal or two-color combination—with the large rings in one color and the small rings in another.





LARIMAR

STEPPING STONES

As you create this necklace, picture the stepping stones in a Japanese garden. This is an intricate and feminine pattern that demands a simple, but stunning, pendant.

WEAVE

Japanese Stepping Stones

DIMENSIONS

17 in. with an 1½-in. pendant

MATERIALS

Jump Rings

- **66** 18-gauge 6.5mm ID jump rings (large)
- **644** 20-gauge 2.75mm ID jump rings (small)

Other

- 38x20mm two-part larimar pendant set in sterling silver
- silver toggle clasp, ring 12mm and bar 19mm (Bamiyan Silver)

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)

Plan of action:

- ❑ Make the two sides of the necklace
- ❑ Join together and add the pendant
- ❑ Attach the clasp
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round Argentium silver wire. The 18- and 20-gauge wire used to make the rings is half-hard. These ring sizes also work for 10% silver filled and copper.

1

Make the necklace sides

This necklace is built with Japanese Stepping Stones weave segments, which use two large and 20 small rings each. Review the Japanese Stepping Stones weave instructions (p. 102). Follow steps 1–8 to make two 16-segment chains **a**. (Each segment has a pair of large rings, so this is a fast way to count.)



Join together and add the pendant

Open two large rings. Place the two chains in a row and turn them so the end pair of large rings in the center, where the pendant will be linked, are both facing downwards **b**. Hold an open large ring with pliers. Pick up a pair of small rings at the end of a side chain, the bail of the pendant, and the pair of rings at the other side chain. Close the ring. Connect a second large ring through the same path.



2

Attach the clasp

Review attaching toggle clasps (p. 110). Open four small jump rings. Locate the pair of small rings not connected to anything at each end of the necklace. At one end, open the two small rings, connect the ring part of the clasp, and close the two small rings.

At the other end, link one small jump ring through the pair of end rings and close it. Continue linking small rings, one into the next, for a chain of four. Attach the last one to the loop on the toggle.

Make adjustments

Add length by adding Japanese Stepping Stones segments in pairs—one to each side of the necklace. Each pair of segments will add 1 in. to the length, and will require four large and 40 small rings.



EXPLORE AND EXPERIMENT

Bracelet

Make additional components and link them together to make a bracelet and add a clasp. An alternative is to source larimar links and use them as elements in your bracelet. Or, wire wrap larimar beads and add them like charms to the large rings along the edge of the bracelet.

Give yourself permission to play—make several components and play with other ways to combine them.

Link two chains side by side to make a double-width chain. Or, use two different metals for the small and large rings. What if the large rings were black enameled copper?



Earrings

Two components, attached to a decorative earring finding, make an elegant pair of earrings. Here, larimar stone chips are wrapped on fine headpins. Three are dangled from each earring at three levels.

Add drama by attaching a top-drilled crystal or wire-wrapped dangle to the bottom ring. Earring findings are from Nunn Designs.



LA RONDE NECKLACE

A V-neck of flat mesh is highlighted with playful beads from glass bead artist Marcia Kmack of Pagosa Springs, Co. The lighthearted round beads made me think of La Ronde, a large amusement park in Montreal, Quebec, Canada.

WEAVE

European 4-in-1

DIMENSIONS

16½ in.

MATERIALS

Jump Rings

- 18-gauge 3.5mm rings noted in instructions
- **457** 18-gauge 4mm ID jump rings
- **6** 18-gauge 3mm ID jump rings
- **8** 18-gauge 5.5mm ID jump rings
- **12** 18-gauge 7mm ID jump rings

Beads and Findings

- 24x16mm puffy rondelle focal bead
- **4** small 8mm donut beads, turquoise
- **4** small 8mm donut beads, green
- **4** medium 12–13mm donut beads, green
- **6** medium 12–13mm donut beads, stripes
- **2** medium 12–13mm donut beads, dots on black
- 3 in. 20-gauge silver headpin with 3mm ball end
- 3-strand lobster clasp with extender chain, silver

Note

The jump rings for this project are round, Argentium silver wire. The 18-gauge wire is half hard. These ring sizes also work for other metals.

1

Make the necklace chain

Review the instructions for European 4-in-1 weave (p. 97). Follow steps 1–12 to make the foundation row and then stabilize it with painters tape. **This chain starts with three pairs of rings connected by two single rings.**

The pattern has two repeating rows: Row 1 has two rings and Row 2 has three rings.

Repeat steps 13–17 of the weave instructions until there are 45 rings along each outside edge. Make a second strip identical to the one just completed.

Join with a seam

Review the European 4-in-1 weave instructions noting steps 25–30 on how to join two sections on an angle. First you'll create an angle at one end of each rectangle, and then you'll use four jump rings to join those edges together. The photo shows the seam.



Plan of action:

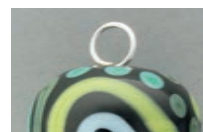
- ❑ Make two European 4-in-1 sides
- ❑ Join them together
- ❑ Attach the clasp
- ❑ Wire wrap the focal bead
- ❑ Attach the accent beads
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- pair of roundnose pliers
- flush cutters
- painters tape
- fine-tip marker

TIP

Slide a 5mm jump ring onto your roundnose pliers and mark the spot with a fine-tip marker. Practice with some copper wire. It will take approximately ¾ in. of wire to make a 5mm loop.



2

Attach the clasp

Review attaching multistrand clasps (p. 110). Open six 18-gauge 3mm jump rings. Use three rings to attach each clasp half to the end three rings of each chain **a**.

Wire wrap the focal and attach the accent beads

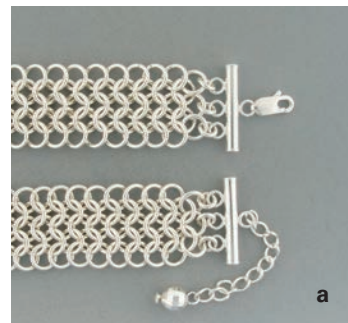
String the focal bead on the headpin. Form a simple loop (5mm ID). Set out the donut beads in order and check that the jump rings for attaching them are large enough for free movement, but don't leave too much open space.

Use an 18-gauge 3.5mm ring to attach the focal bead's loop to the jump ring at the point of the V (it's a connecting ring added as the point of the seam).

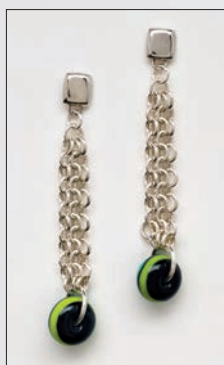
Use 18-gauge 5.5mm rings to attach a small donut bead on each side of the main focal bead. Each of these rings passes through two edge rings. Attach the next medium beads with 7mm rings, and those rings pass through the next two edge rings. Follow this pattern until all the beads are added **b**.

Make adjustments

Make the necklace longer by extending the length of each mesh rectangle at the ends next to the clasp.

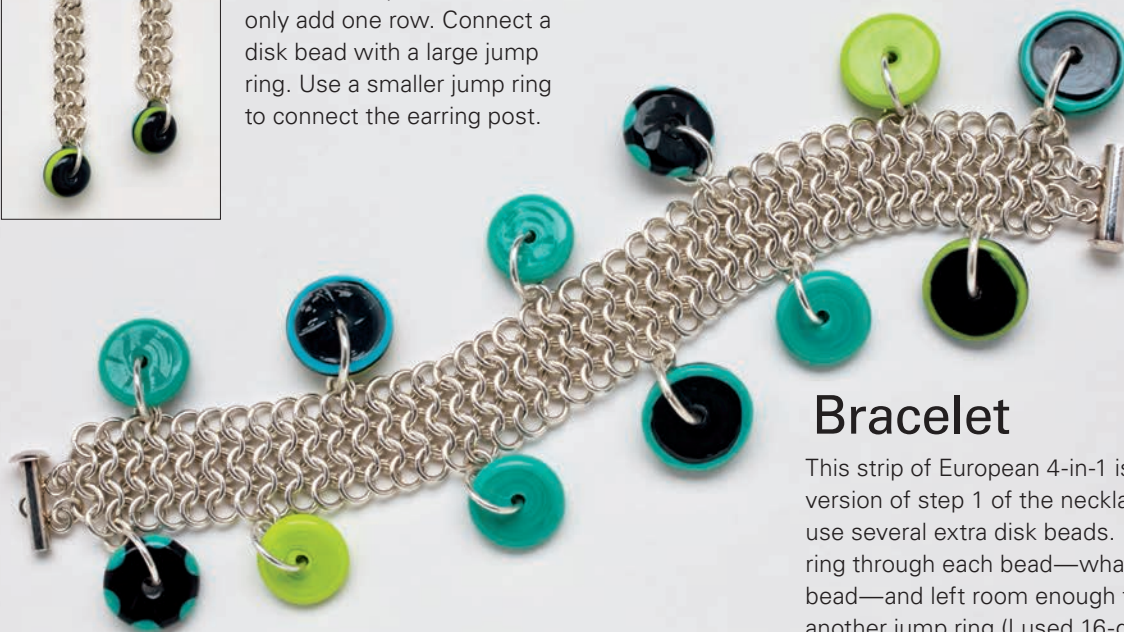


EXPLORE AND EXPERIMENT



Earrings

So many possibilities! Start with a wide strip of the weave (six or seven pairs across), but only add one row. Connect a disk bead with a large jump ring. Use a smaller jump ring to connect the earring post.



Bracelet

This strip of European 4-in-1 is a shorter version of step 1 of the necklace. I decided to use several extra disk beads. I added a jump ring through each bead—whatever size fit the bead—and left room enough to connect it to another jump ring (I used 16-gauge 8.5mm, 16-gauge 8mm, and 18-gauge 7mm rings).

EUROPEAN GLITTER



Swarovski briolettes provide the glitter and sparkle; the large, round, sterling silver beads add the punctuation; and the quiet, classic, side chains complete the picture.

WEAVES

European 4-in-1, Jens Pind Linkage (JPL)

DIMENSIONS

17½ in. with a 1-in. center section.

Note

The jump rings for this project are round, half-hard, 18-gauge Argentium silver wire. These ring sizes also work for sterling silver and 10% silver filled.

MATERIALS

Jump Rings

- **410** 18-gauge 3.5mm ID jump rings (front section)
- **165** 18-gauge 3mm ID jump rings (side chains)
- **3** each of three colors of jump rings 18-gauge 3mm ID (optional)

Beads and Findings

- **23** 11x5.5mm Swarovski briolette pendants, erinite
- **2** 12mm round, hammered, sterling silver beads
- 8 in. 20-gauge Argentium silver wire (to wire wrap the beads)
- 8 in. flexible beading wire, .019 in., 49 strand
- **2** crimps, sterling silver, 2x2mm
- **2** crimp covers, sterling silver, 3mm
- **2** wire protectors, sterling silver, .031 in.
- toggle clasp, 12mm ring, 19mm bar (Bamiyan Silver)

Plan of action:

- ❑ Make the European 4-in-1 front section
- ❑ Make the Jens Pind Linkage side chains
- ❑ Attach the clasp to the side chains
- ❑ Add beading wire to the front section
- ❑ Add the crystals to the front section
- ❑ Wire wrap the silver beads and connect to the front
- ❑ Connect the side chains to the silver beads
- ❑ Make adjustments

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers to wrap the pendant bead
- flush cutters
- crimping pliers

1

Make the chain mail front and side sections

Review the European 4-in-1 weave instructions (p. 97). Use 18-gauge 3.5mm rings and follow steps 1–12 of the weave instructions to make the foundation row and then stabilize it with painters tape. This chain starts with five pairs of rings connected by four single rings. The pattern has two repeating rows:

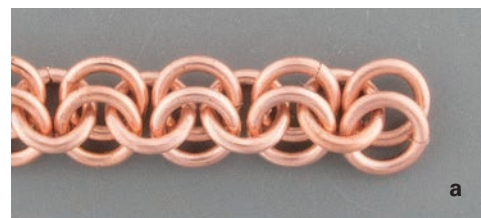
- Row 1 has four rings
- Row 2 has five rings

Use this ring count to repeat steps 13–17 of the weave instructions until there are 46 rings along each outside edge **a**.

Review the Jens Pind Linkage weave instructions (p. 103). To get started, it's easiest to use temporary rings in three different colors. Make three pattern repeats with temporary rings **b**, and then switch to 18-gauge 3mm rings. Make two sections of chain, each with 27 repeats, or approximately 5 in.

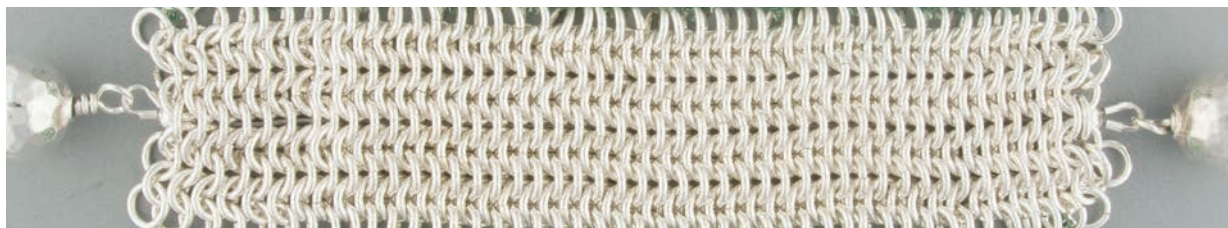
Attach the clasp

Open the end jump ring of one of the side chains, add the toggle ring, and close the ring. Open three 18-gauge 3mm rings. Link the rings into a three-ring chain attached to the side-chain end. Pick up the bar part of the clasp in the third ring and close the ring **c**.



Add beading wire to the front section

String a crimp bead and a wire protector on the beading wire. String back through the crimp bead. Crimp the crimp bead and cover with a crimp cover (p. 109). String the beading wire through the center column of jump rings. The flat mesh piece has five columns—pass the wire down the third column.



Add the crystals and silver beads to the front section

The flat mesh section has 46 rows. Add 12 crystals to one edge and 11 to the other in a staggered manner so that a crystal in one side is not directly in line with one on the other side. Add the crystals to the edge row of jump rings. Start on one edge and, working from left to right, add a crystal to every fourth jump ring.

Turn the work around, and on this edge, add a crystal to the first jump ring, and then to every fourth ring.

You will need 4 in. of 20-gauge wire to wrap each sterling silver bead. Before finishing the wraps, insert the loop made by the wire protector at one end of the flat mesh section, and then complete the wrapped loop. Add the bead to the wire and complete the second wrapped loop. Repeat with the second bead.

Connect the side chains

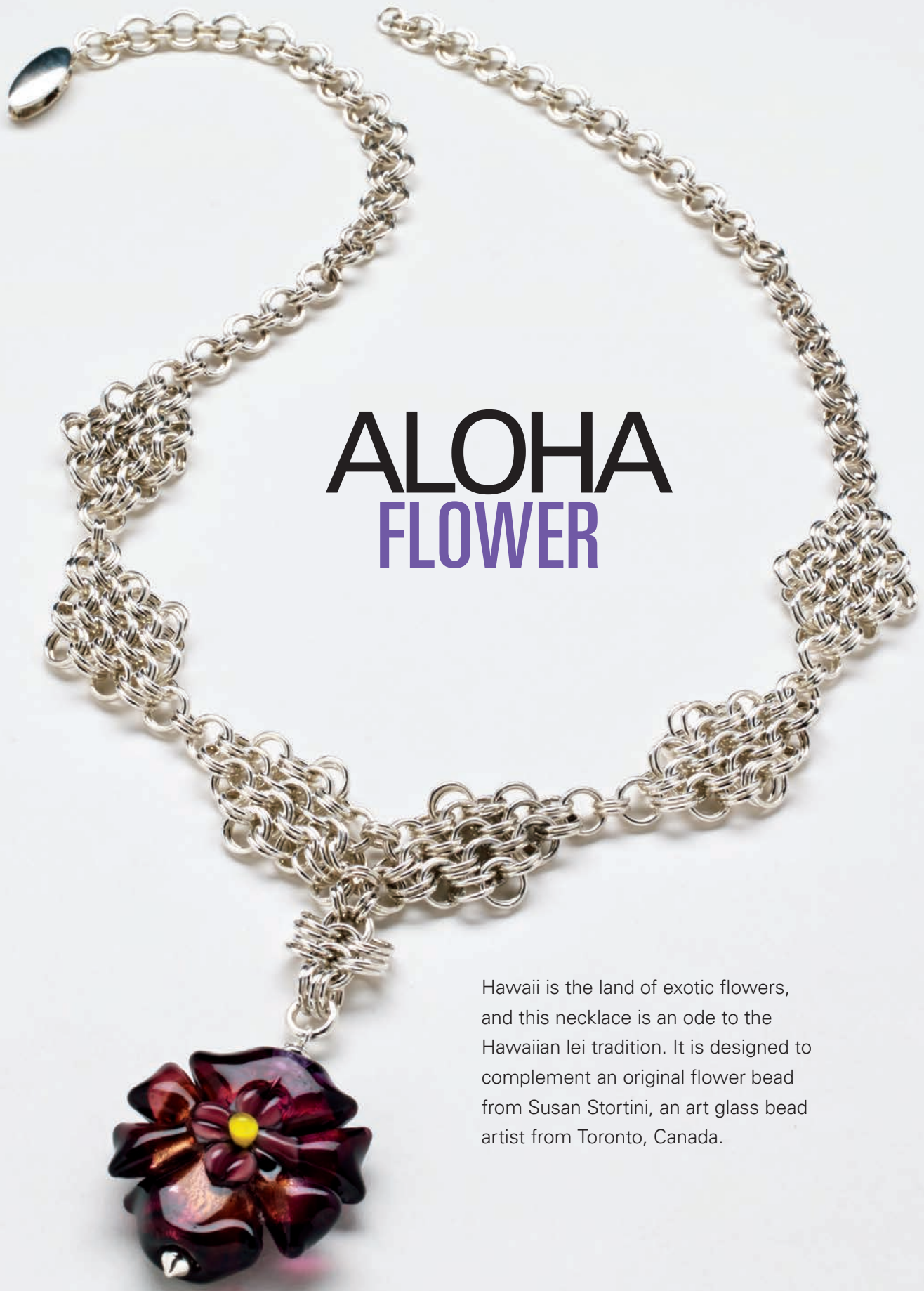
Open the end jump ring of a side chain, add the end loop of the silver bead, and close the ring. Repeat to add the other side chain.

String a crimp bead and wire protector at the end of the beading wire, and come back through the crimp bead. Before folding the crimp, make final adjustments to the length of the beading wire. You want this section to curve, but not be “wrinkled,” and you don’t want bare beading wire to show.



Make adjustments

Increase the length by extending the length of the JPL side chains. Each additional 1/2 in. will require three pattern repeats (nine jump rings). Remember to increase each side equally.

A silver chain necklace with a large, dark red glass flower pendant. The necklace is made of a silver-colored metal chain with a complex, interlocking link pattern. The flower pendant is made of dark red glass with a yellow center and a small silver-colored metal tip at the bottom. The necklace is displayed against a white background.

ALOHA FLOWER

Hawaii is the land of exotic flowers, and this necklace is an ode to the Hawaiian lei tradition. It is designed to complement an original flower bead from Susan Stortini, an art glass bead artist from Toronto, Canada.

WEAVE

European 4-in-1, 8-in-2

DIMENSIONS

22 in. long with a 3-in. pendant

MATERIALS

Jump Rings

- **386** 18-gauge 5mm ID jump rings
- **88** 18-gauge 3.5mm ID jump rings
- 14-gauge 4mm ID jump ring

Beads and Findings

- 35x35mm focal bead
- 5x4mm sterling silver, Bali spacer bead (Bamiyan)
- 2 in. sterling silver, 20-gauge tulip bulb headpin (Stones and Findings)
- oval, magnetic, sterling silver dexterity clasp, (RioGrande)

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers
- flush cutters
- painters tape

Plan of action:

- ❑ Make the European 8-in-2 diamonds
- ❑ Make the European 8-in-2 front piece
- ❑ Make the 4-in-2 side chains
- ❑ Wire wrap the pendant bead
- ❑ Connect the side chains and triangles
- ❑ Connect the front section and attach the pendant
- ❑ Attach the clasp
- ❑ Make adjustments

Note

The jump rings for this project are made from round sterling silver wire. The 18-gauge wire used is half hard, and the 14 gauge is dead soft. These ring sizes also work for other metals.

1

Make the chain mail diamonds, front piece, and side chain

Review the European 4-in-1 weave instructions (p. 97). Go to step 31 to see "Doubled Up European 4-in-1: Diamond" (rings doubled up in a chain mail weave is called a "kinged" weave). Make a foundation row consisting of nine pairs of 5mm rings and stabilize it with painters tape. Follow the instructions and make six diamonds **a**.

Follow steps 38–40 of the European 4-in-1 weave instructions. Notice there are three columns, each with three pairs of rings. This photo shows the two pairs of small rings at the top that you will add later (see **e**). Also, the last two pairs of rings will flop down, and they will be connected to the loop of the pendant **b** and **f**.

Review the European 4-in-2 weave (p. 100). Make a chain that alternates a pair of 5mm rings with a pair of 3.5mm rings, starting and ending with a pair of 5mm rings. Use a total of 17 pairs of large rings and 16 pairs of small rings **c**. Repeat to make two equal side chains.



2

Wire wrap the pendant bead

String the pendant bead and the spacer bead on the 2-in. decorative headpin. Make a simple loop about 2.5mm ID. It must be big enough to accommodate the heavy jump ring that connects the bead to the main chain.

3

Connect the side chains and diamonds; finish the necklace

Place three of the diamonds you made in step 1 so that the center columns of each are tipped away from you. Connect the diamonds end to end with a pair of 3.5mm jump rings. Take a side chain and use a pair of 3.5mm jump rings to connect one end to a diamond **d**. Repeat with the other three diamonds and the other side chain.

Place the side chains so the triangles are positioned for connecting at the center. Make sure that the triangles in both chains are oriented the same, i.e. the center column of each triangle is tipped away from you. Use a pair of 3.5mm rings to join the end pair of rings of the triangles at the end of each chain. To make a V shape, use another pair of rings to join the rings at the ends of the next column that is tipped in the same direction. See the red dots **e**.

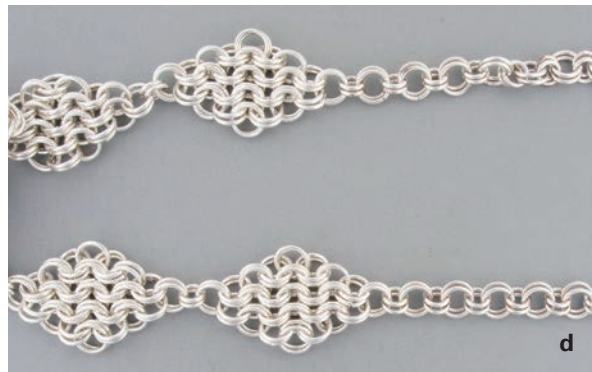
To connect the front piece and add the pendant, place the front piece (**b**) in front of the V. Turn it so the center column is tipped away from you. (Four rings will hang down at the bottom.) Insert a pair of 3.5mm rings to connect the center pair to the end of the left triangle, and another pair in the same place to connect to the end of the right triangle. Use the 14-gauge 4mm ring to connect the base of the center section (four rings) to the loop at the top of the wire-wrapped pendant **f**.

Attach the clasp

Use an 18-gauge 3.5mm ring to attach the clasp to one side chain. At the end of the other side chain, add a pair of 3.5mm rings, and then a single 3.5mm ring. To open this dexterity clasp, pinch it, then insert that single ring, and then let go. There is a magnet inside to keep it closed.

Make adjustments

To lengthen this chain, add a pair of small and a pair of large rings to each side chain.



DIAMOND DROPS

This is an impressive, flat mesh necklace with dangling diamond shapes and faceted, black spinel drops. Such a dramatic necklace is perfect for a special occasion!



WEAVES

European 4-in-1, European 4-in-2

DIMENSIONS

The chain is $\frac{7}{8}$ in. wide and $15\frac{1}{2}$ in. long. It is easily lengthened via the simple back chain. The center diamond plus briolette is $4\frac{1}{4}$ in. long.

MATERIALS

Jump Rings

- **741** 18-gauge 3.5mm ID jump rings
- **162** 18-gauge 2.5mm ID jump rings
- **2** 16-gauge 5mm ID jump rings (clasp)

Beads and Findings

- **5** graduated pendant beads/briolettes (my black spinel beads ranged from 27–21mm in length)
- **5** 3mm round sterling silver beads
- **5** 14x11mm sterling silver cones that suit the pendant beads
- 10 in. 26-gauge round silver wire (or a gauge that fits through the holes in the pendant beads)
- $12\frac{1}{2}$ in. 22-gauge round silver wire (wrapped loop)
- **2** 3-to-1 silver connectors
- S-hook clasp, silver

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers
- flush cutters
- painters tape

Plan of action:

- ❑ Make the main flat mesh chain
- ❑ Make the back chains
- ❑ Attach the 3-to-1 connectors
- ❑ Attach the clasp
- ❑ Make the flat mesh diamonds in three sizes
- ❑ Wire wrap the pendant beads
- ❑ Attach the pendant beads
- ❑ Attach the diamonds
- ❑ Finishing
- ❑ Make adjustments

Note

The jump rings for this project are round Argentium silver wire. The 18- and 20-gauge wire is half hard. These ring sizes also work for 10% silver filled, jeweler's bronze, or copper.

1

Make the flat mesh chain

The foundation row of European 4-in-1 (flat mesh) weave uses 11 jump rings: eight 18-gauge 3.5mm and three 18-gauge 2.5mm. The small rings are along one edge and cause the chain to curve around your neck. Review the weave instructions for European 4-in-1 (p. 97). Follow steps 1–12 to make the foundation row and then stabilize it with painters tape.

Open two 18-gauge 3.5mm and one 18-gauge 2.5mm ring. Close the other eight rings. This chain has four pairs of rings joined by three single rings. There are two repeating rows: Row 1 has three rings (two 18-gauge 3.5mm, one 18-gauge 2.5mm) and row 2 has four rings (three 18-gauge 3.5mm, one 18-gauge 2.5mm). Use this ring count to repeat steps 13–17 of the weave instructions until there are 73 rings along the outside edge.

Add 3-to-1 connectors

Open six 18-gauge 2.5mm rings. Remove the stabilizing tape. Add or remove rings at each end of the chain so that both end rows have three jump rings (but there are still 73 rows with four rings). Use a 2.5mm jump ring to connect each of the three end jump rings to a loop on a connector.

Make the back chains

Make two lengths of 4-in-2 weave (p. 100). Each piece of chain should have 18 pairs of 18-gauge 3.5mm jump rings. Use a single jump ring to attach a piece of chain to the single loop of both 3-to-1 connectors.



Diamond accents

The diamonds are also built with the European 4-in-1 weave. Begin with the longest row in the middle of the diamond, build one side, and then turn it around and build the other side. One end of the foundation row will be joined to the edge of the main chain, and the other end joined to the briolette component. All of the jump rings for the diamonds are 18-gauge 3.5mm.

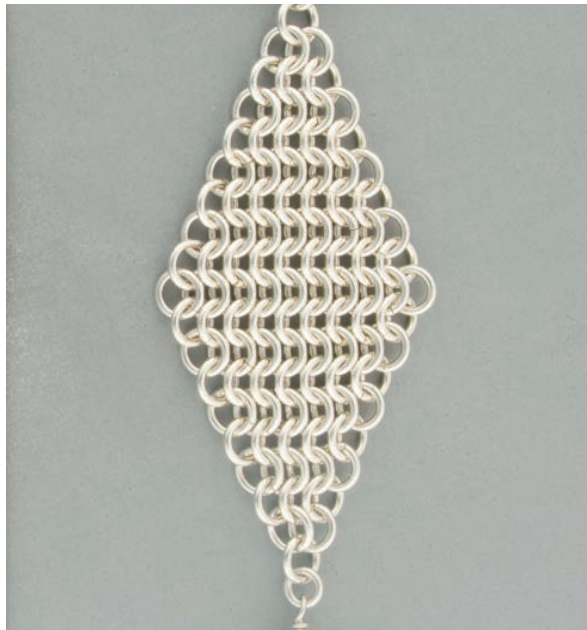
Large

The foundation row for the large diamond uses 29 jump rings. Open nine and close 20 rings. (Two rings will be removed later.) Review the European 4-in-1 weave. Follow steps 1–10 to make the foundation row and stabilize it with painters tape (steps 11 and 12). This chain will have 10 pairs of rings joined by nine single rings. (See steps 21–24 on making a diamond shape). The pattern has two rows: Row 1 has nine rings and row 2 has eight rings (to create a diamond shape instead of a rectangle, the length of the second row is reduced by omitting the two end rings). The following rows have seven, six, five, four, three, two, and one ring. Remove the painters tape. Then remove one ring from each end pair.

Build the other side of the diamond: The first row has seven rings, then six, five, four, three, two, and one.

Medium

The two medium diamonds have a foundation row of 23 jump rings (eight pairs joined by seven single rings). Open seven and close eight rings (two of these rings will be removed later). Join the rings to make the foundation row and stabilize it with painters tape just as with the large diamond. The first row has seven rings. The following rows have six, five, four, three,



two, and one ring. Remove the painters tape and remove one ring from each end pair. Build the other side of the diamond by adding five, four, three, two, and one ring.

Small

The two small diamonds have a foundation row of 17 jump rings (six pairs joined by five single rings). Open five and close 12 rings. Join them together to make the foundation row. The first row has five rings, and the following rows have four, three, two, and one ring. Remove the tape and remove one ring from each end pair. Build the other side of the diamond by adding three, two, and one ring.

TIP

You might find it helpful to insert a temporary, colored ring to mark these spots before you start to attach the dangles.



3

Pendant beads

Cut a 2½ in. piece of 22-gauge wire. In step 1, make a mark near the tip of the roundnose pliers for a small loop. In step 2, make the 90-degree bend at the ¾-in. mark, and in step 8, make just two wraps **a**.

String a briolette to the middle of a 2-in. piece of 26-gauge silver wire. Fold both sides of the wire upwards, molding the wire around the tip of the bead. Twist the two wires around each other to form a single wire **b**. Make a small wrapped loop. At the half-way point (before any wraps), pass the end of the wire through the wrapped loop you made in the 22-gauge wire **c**. Continue, and make just two wraps **d**. Trim the extra wire.

To finish the pendant, string a bead cone **e** and a 3mm silver bead on the 22-gauge wire. Press the cone down onto the briolette, hiding the 26-to-22-gauge connection. Make a wrapped loop, wrapping until the wraps sit tightly above the tip of the silver bead (likely three wraps). Trim the wire and tuck in the end. Wrap all five briolettes. Photo **f** shows the completed unit attached to the chain mail.



4

Add the briolettes to the diamonds

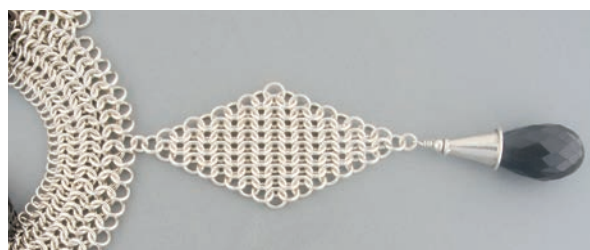
With an 18-gauge 2.5mm ring, join each wrapped briolette to the tip of a diamond shape. Match the bead sizes to the diamond sizes (largest briolette to largest diamond, medium-to-medium, and small-to-small).

Add the clasp

Open two 16-gauge 5mm jump rings. Add one to the end pair of rings of a back chain and close it. Repeat for the other back chain. Add the S hook to one of these rings.

Add the diamonds to the chain

Count 20 edge rings from one end of the chain and attach a small diamond in the next side ring. Count seven edge rings and attach a medium diamond in the next ring. Count seven edge rings and attach the large diamond in the next ring (#37 from the edge). Count



seven edge rings and attach a medium diamond in the next ring. Count seven edge rings and attach a small diamond in the next ring. There should be 20 edge rings remaining to the end of the chain.

Make adjustments

Make the necklace longer by lengthening the back chains to fit. The necklace is designed to sit at the base of your neck.

BOLD BEAUTY



This is glamour at its finest! The Turkish Roundmaille chain is dense enough to support the visual weight of the very large (but hollow) art glass beads by Susan Hood of Susan Hood Designs in Nova Scotia. The complexity of the weave contrasts with the smooth, shiny beads. Textured silver beads (also hollow) enhance these stunning baubles.

WEAVE

Turkish Roundmaille

DIMENSIONS

20½-in. long; center section is 7¾-in.

MATERIALS

Jump Rings

- **411** 18-gauge 3.5mm ID jump rings
- **5** 16-gauge 3mm ID jump rings (clasp)

Beads and Findings

- **5** 20x30–27x36mm graduated rondelle hollow glass beads
- **6** 12mm round, textured silver beads
- 12 in. flexible beading wire, .019 in., 49 strand
- **2** 2x2mm crimp beads
- **2** 3mm crimp covers
- **2** wire protectors, .031 in.
- sterling silver toggle clasp

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- crimping pliers
- wire cutters

Plan of action:

- ❑ Make the two Turkish Roundmaille side chains
- ❑ Make the front section
- ❑ Attach the side chains
- ❑ Attach the clasp
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round, half-hard, Argentium silver wire. These ring sizes also work for 10% silver filled, copper, jeweler's bronze and enameled copper wire. For a chunkier look, use 16-gauge 4.5mm jump rings.

1

Make the Turkish Roundmaille side sections

Review the instructions for Turkish Roundmaille weave (p. 106).

Following steps 1–7, make two sections of chain: one with 11 segments and one with 11½ segments. (Note there are two segments with 36 rings per inch.) The shorter side chain attaches to the toggle bar because the bar adds more length to the chain than the toggle ring.



2

Make the beaded front section

Set out the beading wire, crimp beads, wire protectors, and crimp covers. Your beading wire should be about 4–5 in. longer than the finished length of the beads. Review adding crimps, wire guardians, and crimp covers (p. 109). At one end of the wire, string a crimp bead, then pass the wire up one side of the wire protector, around the curve, and back down the other side. Pass the wire back through the crimp bead. Leave a 1-in. tail. Tighten, and use crimping pliers to crimp the crimp bead. Cover the crimp bead with a crimp cover. String a silver bead, then alternate glass beads and silver beads. End with a silver bead. Attach a crimp bead, the wire protector, and crimp cover as before. Before crimping, tuck the tail wire through a bead or two and then pull the tail wire with pliers to tighten so there are no gaps in the wire. It must NOT be too tight and rigid because it has to curve. Trim any wire ends.



3

Attach the side chains

Remove one of the three rings at the end of each side chain. Open a remaining ring (but don't remove it), hook it onto a wire protector of the beaded section and re-close the ring. Repeat with the other ring. Repeat this step to connect the other side chain to the other end of the center section.

Attach the clasp

Review the instructions for attaching toggle clasps (p. 110). Open one of the end three rings and remove it. Use a 16-gauge 3mm ring to connect the end two rings to the loop of the ring part of the clasp. This creates a graduation from a row of three rings, to two rings, to a final, single ring that connects to the ring part of the clasp. For the bar side, open one of the end three rings and remove it. Use four 16-gauge 3mm rings to make a mini-chain that connects the end two rings to the loop of the bar part of the clasp.



Make adjustments

The toggle clasp adds about 1 in. to the length. If you want to reduce or increase the finished length of the necklace, remove or add segments from each side chain. Each complete segment measures about 1/2 in. Increase or decrease the length in 1-in. increments by adding/removing a segment on each side. Each additional segment requires 18 jump rings.

EXPLORE AND EXPERIMENT



Bracelet

Make a length of the Turkish Roundmaille weave and attach a toggle clasp for a stunning bracelet.



Earrings

Use the Turkish Roundmaille instructions to make earrings two or three or more segments long. For a more delicate look, I used 20-gauge 3mm rings and made each piece 2 1/2 segments in length.

A long necklace made of silver barrel weave chain. It features three small, oval, blue beads spaced along the chain. The chain ends in a large, oval, colorful pendant with a blue and green design and a small silver bead at the bottom.

BARREL OF BEADS

I adore the geometric lines in the art glass beads by JC Herrell. My goal was to create a compelling way to feature the Barrel weave and frame the beads in an unusual, long, dangling center focus for a necklace.

WEAVE

Barrel

DIMENSIONS

19¼ in. (The side chains can vary in length, depending on your preference for the length of your necklace. It's effective either short or very long.)

MATERIALS

Jump Rings

- 426 18-gauge 3.5mm ID jump rings for the Barrels
- 3 16-gauge 7mm ID jump rings to add the donuts
- 16-gauge 5mm ID jump rings to connect to the lobster clasp

Beads and Findings

- 29x20mm pendant focal bead
- 3 11x5.5mm donut beads in a color to coordinate with the focal bead
- 2 6mm sterling silver, beaded daisy spacer beads
- 3-in. headpin with a 3mm bead end for the focal bead
- 13mm lobster claw clasp

Tools

- 2 pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers
- flush cutters

Plan of action:

- ❑ Make the main chain
- ❑ Attach the clasp
- ❑ Wire wrap the pendant bead
- ❑ Make the front bead components
- ❑ Attach the pendant
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round, Argentium silver wire. The 16- and 18-gauge wire is half hard. These ring sizes also work for sterling silver and 10% silver filled. For copper, I've used 16-gauge 4.5mm rings.

1

Make the chain

Review the Barrel weave instructions (p. 87). Follow steps 1–6, and make 69 Barrels. End the chain with a 3.5mm ring.

Attach the clasp

Review attaching a lobster clasp (p. 110). Use a 3.5mm ring to attach the clasp to the end link of the main chain. Add a 3.5mm ring to the other end of the main chain.



2

Make and attach the pendant and the bead components

Review the technique for wire wrapping a bead with double loops (p. 108). On the 3-in. headpin, string a Bali spacer bead, the focal bead, and another Bali spacer bead. Make a double loop **a**.

Return to the Barrel weave instructions and make three mini chains, each with five Barrels. Mark the center Barrel of the main chain with a piece of scrap wire. Open a 16-gauge 7mm jump ring. Connect the ring through one end of a mini chain, a donut bead, the other end of the mini chain, and then the pair of rings of the middle Barrel of the main chain. Close the ring.

Repeat twice, adding the donut bead and chain to the middle Barrel of the previous mini chain and donut bead combination **b**.

Use an 18-gauge 3.5mm ring to attach the loop at the top of the pendant to the center of the bottom mini-chain **c**.

Make adjustments

Make the necklace longer by adding additional Barrel components in pairs, one on each side of the chain. Each pair will add ½ in. to the length. Each Barrel requires five 18-gauge 3.5mm jump rings.



EXPLORE AND EXPERIMENT

Make several mini-chain and bead components (about 7/8 in. each/seven per bracelet). Alternatively, use a plain Barrel weave with a decorative clasp. Or, add small, color-coordinated beads to the rings that join each Barrel together. Single bead components make a wonderful pair of earrings. Use two 3.5mm jump rings to connect the earring finding to the heavy ring of the bead component. Two rings add movement to the dangling component.



BYZANTINE DANGLES

This can be glamorous or it can be casual—it all depends on the beads. I love the flexibility of wearing this necklace—over a crew-neck shirt, with a V-neck, inside an open-neck blouse, or with a sweetheart neckline.

WEAVE

Byzantine

DIMENSIONS

18½ in. The length of the longest dangle, including the bead, is 3½ in.

MATERIALS

Jump Rings

- 600 18-gauge 3.5mm ID jump rings
- 16-gauge 3mm ID jump ring to attach the lobster clasp
- 18-gauge 4mm jump ring for the clasp extender
- 7 20-gauge 6mm ID jump rings to attach the pendant beads

Beads and Findings

- 6 30x8mm pendant beads (mine are kyanite)
- 17mm heart lobster clasp

Tools

- 2 pairs of pliers (flatnose, chainnose, bentnose)

Plan of action:

- ❑ Make the Byzantine side chains
- ❑ Make the Byzantine chain dangles
- ❑ Assemble the center section and side chains
- ❑ Add the beads
- ❑ Make adjustments
- ❑ Attach the clasp and extender
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round, half-hard, Argentium silver wire. These ring sizes also work for jump rings made from 10% silver-filled, copper, jeweler's bronze, and enameled copper wire.

1

Make the Byzantine chains and dangles

Each side chain is 14 segments long. Review the Byzantine weave instructions (p. 88). Follow steps 1–7 to make a Byzantine segment **a**. Step 10 tells how to make a continuous chain. Follow the same directions to make the seven dangles. Make one dangle that has four segments. Make two dangles that have three segments. Make two dangles that have two segments. Make two dangles that have one segment.

Assemble the center section and sides

Open 40 rings. Position the dangles in order like the photo—longest in the center, and shortest at the ends. Add two rings through the end pair of rings of the two shortest dangles. Add four rings, all through the end pair of rings of all the other dangles. Use two rings to connect a side chain to a short dangle. (This pair will sit right beside the other pair added to the short dangles.) Use two rings to connect that pair of rings to one pair of the rings just added at the top of a medium dangle. Follow this pattern to connect the remaining dangles in order. Use the last two rings to connect the other short dangle to the other side chain.



Add the beads

Open seven 20-gauge 6mm rings. Attach a pendant bead to the ends of a dangle **b**. Repeat to attach seven pendants.



Note

20-gauge rings were the thickest rings that would fit through the holes in the stone beads.

2

Make adjustments

Note that a toggle clasp adds about 1 in. to the length. To reduce or increase the finished length of the necklace, remove or add multiples of half segments from each side chain. Each complete segment measures about $\frac{1}{2}$ in. Therefore, adding one segment to each side of the chain will add 1 in. to the length.

Attach the clasp and extender

Open a 16-gauge 3mm ring, and connect it through the end pair of rings and through the small loop of the clasp. Close the ring. Add an 18-gauge 3.5mm ring to the end pair of rings on the necklace. Add 12–14 18-gauge 3.5mm rings, one by one, to make an



extender chain. End the chain with an 18-gauge 4mm ring. If desired, finish the extender chain with a charm or drop on the last link.

EXPLORE AND EXPERIMENT



Bracelet

These kyanite cabochons are glued to connector plates (see p. 56) and offset with double strands of Byzantine.

Earrings

Make two lengths of Byzantine with $2\frac{1}{2}$ segments each. Add a kyanite bead and earring finding to each—and you're done.

This lovely Bali silver earring post is connected with two 18-gauge 2.5mm jump rings. Using two rings keeps the bead parallel to the front of the post.





GRADUATED DOUBLE SPIRAL

This classic necklace has a spiraling, rope texture. It's impressive, whether it's worn with or without a pendant. Creating a seamless graduated rope means designing a chain where one size and gauge of jump ring flows into the next with no obvious transitions. The goal is a smooth sweep from large, heavy rings at the center, to small, light rings next to the clasp. The cluster pendant featured here features beads from glass bead artist Maureen Ross of Delta, Ontario, Canada.

WEAVE

Double Spiral

DIMENSIONS

21½ in. with a 2¾-in. pendant

MATERIALS

Jump Rings

- **28** 16-gauge 6.5mm ID jump rings
- **28** 16-gauge 6.25mm ID jump rings
- **14** 16-gauge 6.0mm ID jump rings
- **28** 18-gauge 5.25mm ID jump rings
- **68** 18-gauge 5.0mm ID jump rings
- **68** 18-gauge 4.75mm ID jump rings
- **68** 20-gauge 4.0mm ID jump rings
- **68** 20-gauge 3.75mm ID jump rings
- **28** 22-gauge 3.25mm ID jump rings
- **22** 16-gauge 5mm ID jump rings (pendant)
- 14-gauge 12mm ID jump ring (pendant)
- **5** 16-gauge 3mm ID jump rings (clasp)

Beads and Findings

- **11** donut-shaped art glass beads (graduated sizes from 17–23x6–10mm)
- **11** sterling silver 1½-in. 24-gauge headpins with 1.5mm ball ends
- **11** 4mm Swarovski bicone crystals, crystal AB
- 17 in. jewelry chain, box or cable, 2.7mm wide (8 links per 1 in.)
- 15mm sterling silver toggle clasp (24mm bar)

Plan of action:

- ❑ Make the chain
- ❑ Attach the clasp
- ❑ Wire wrap the beads
- ❑ Attach the beads to the chains
- ❑ Assemble the pendant.
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers
- flush cutters

Note

The jump rings for this project are round, Argentium silver wire. The 16-, 18-, and 20-gauge wire used is half hard. These ring sizes also work for 10% silver filled.

1

Make the chain

Review the instructions for Double Spiral weave (p. 96). The strategy here is to start with the largest rings and use them all (28 rings) to make the center section. Then, use half of each of the remaining sizes to weave one side of the necklace, moving from the largest size to the smallest size. Use 14 of the 16-gauge 6.25mm rings; then 14 of the 16-gauge 6mm rings, and so on. Then, starting on the other side of the center section, use the remaining rings to weave

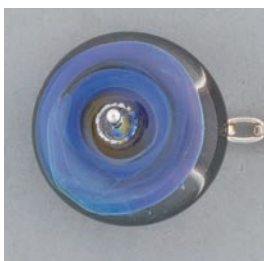
the remaining side of the necklace in a mirror image. Be sure to use a twist tie or some marker at the end of the chain where you are NOT working.

Attach the clasp

Review attaching a toggle clasp (p. 110). Open five 16-gauge 3mm jump rings. Use four linked rings to attach the bar and one ring to attach the ring.



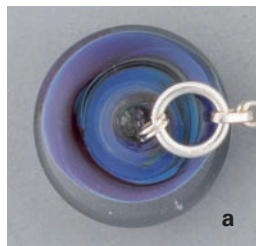
2



Wire wrap the beads

Review making double loops (p. 108). String a bicone crystal and an art glass donut bead on a headpin. Notice that one point of the bicone fits into the donut's hole. Make a double wrapped loop and trim the wire. Curl the loops so they sit flush against the bead's hole. Make a total of 11.

3



Attach the beads to the chains

Cut 11 pieces of chain, counting the links: 19, 17, 15, 13, 11, 10, 9, 8, 7, 6, and 5 links.

Sort the beads according to size. Assign a piece of chain to each bead so the biggest bead gets the longest chain, and so on. Open 11 16-gauge 5mm jump rings. Hold an open ring in your pliers, add the end of a piece of chain, and then add the bead that goes with that length of chain. Close the ring **a**. Repeat for the remainder of the bead-chain pairs.



Assemble the pendant

Open 11 16-gauge 5mm jump rings. Hold an open ring in your pliers, add the other end of a piece of chain that's attached to a bead, and then close the ring. Repeat for the remainder of the bead and chain pairs.

Open the 14-gauge 12mm jump ring. Add on the end of each chain in random order. Close the ring **b**. Slide the large ring onto the necklace.

Make adjustments

Make the necklace longer or shorter by adding or subtracting pairs of rings on each side of the necklace.



EXPLORE AND EXPERIMENT

Bracelet

This bracelet uses heavy 16-gauge 6mm rings, and it is finished with a one-of-a-kind clasp from Hidden Treasures—an antique button set in sterling silver with a safety latch. For a more delicate Double Spiral silver chain, use 18 gauge 5mm ID rings. Or, combine two or three consecutive sizes from the materials list for the necklace.

KNOT JUST FLOWERS



An eye-catching flower pendant is the focal point of this casual, glorious necklace. Beaded links of hematite and pewter beads echo the antiqued flower and are set between Byzantine Knot components.

WEAVE

Byzantine Knot

DIMENSIONS

22 in. long. Pendant is 2 in. across.

MATERIALS

Jump Rings

- **182** 16-gauge 6.25mm ID jump rings
- **48** 16-gauge 3mm ID jump rings
- **18** 18-gauge 4mm ID jump rings

Beads and Findings

- **2** 5x5mm hematite drum beads
- **8** 6mm hematite button beads
- **8** 6.5x5mm pewter spacer beads (Super Time Beads)
- 50mm diameter pewter flower pendant (Super Time Beads)
- **4** silver-lined, 6° crystal seed beads
- **7** 1½-in. pieces 20-gauge round silver wire
- silver hook-and-eye clasp

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- pair of roundnose pliers
- flush cutters

Plan of action:

- ❑ Wire wrap the bead links and the flower
- ❑ Make the Byzantine Knots
- ❑ Learn how to orient the knots
- ❑ Prepare the knots
- ❑ Add a ring to the front of the knots
- ❑ Connect the knots and bead links
- ❑ Attach the clasp
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round, 10% silver-filled wire. The 16-, 18-, and 20-gauge wire is half hard. These ring sizes also work for Argentium silver and jeweler's bronze.

1

Wire wrap the bead links and the flower

Make a simple loop at one end of a 1½-in. (3.8cm) piece of 20-gauge silver-filled wire. (Size your loops to hold a 16-gauge jump ring comfortably.) String a hematite button bead, a pewter bead, and another hematite button bead. Make a simple loop above the beads. Repeat to make a total of four button bead links **a**.

Make a simple loop, and string a pewter bead, a hematite drum bead, and a pewter bead. Make a simple loop above the beads. Make two drum bead links **b**.

Make a simple loop, add four seed beads and make a simple loop **c**. (The loop on the pendant is large, so the seed beads slide inside the loop and help keep it stable.)



Make the Byzantine Knots

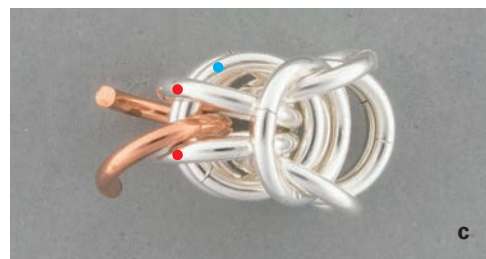
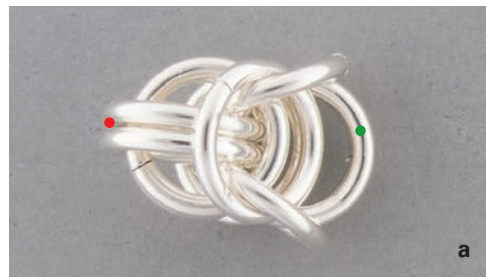
Review the weave instructions for Byzantine Knot (p. 91). Using 16-gauge 6.25mm jump rings, follow steps 1–8 to make a Byzantine Knot. Make 18 Knots using 10 jump rings in each Knot.

Observe and understand Knot orientation

Look at a Knot and notice that both ends have an outside pair of rings pressed together as a pair. Only one end (red dot) has a pair of rings that you can separate a bit and see another pair behind them (our first target) **a**. To help make things visual, think of the Knot as a car. The front end has a vertical “nose,” (red dot) and the back end has a horizontal “trailer hitch” (green dot). Play with a Knot, turning it over and around until you can easily orient it. Photo A is oriented for following my instructions. Photo B has simply been turned on its side (not turned around) **b**.

Add a ring to the front of each Knot

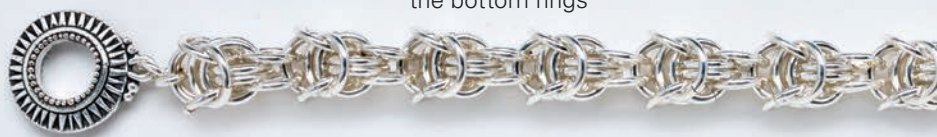
Open 18 18-gauge 4mm rings, one for each Knot. Pick up an open ring (copper for demonstration), go between the pair of rings that you separated at the nose (red dots) and hook under the pair of rings inside (blue dot) **c**. Close the ring. Repeat for all 18 Knots.



EXPLORE AND EXPERIMENT

Earrings

Single components, attached to decorative earring posts, make an elegant pair of earrings. Add drama with a top-drilled crystal, a charm, or wire-wrapped dangle attached to the bottom rings



Bracelet

Link Byzantine Knots together to make a bracelet using the same ring sizes and method as the necklace. Keep the orientation in the same direction as the previous knot. To make a more delicate bracelet, use 18-gauge 5mm jump rings. Each knot uses 12 jump rings; 10 to make the knot and two rings to connect one knot to the next. Each knot measures ½ in.

3

Connect the flower link

Insert the seed bead link through the bail or loop of the flower. Set out two Knots, one on each side of the flower. Turn them so the "nose" of each is pointing to the flower link. Pick up a Knot, re-open the 4mm ring just added, add the loop at one end of the flower link, and re-close the ring. Repeat to attach the other Knot **a**.



Add Knots to the button links

Set out a button link with a Knot on each side. Turn the Knots so the nose of each is pointing to the link. Pick up a Knot, re-open the 4mm ring, add the loop at one end of the bead link, and close the ring. Repeat to attach the other Knot **b**. Repeat this step for all four button bead links.



Join each button component with a drum link

Open four 16-gauge 3mm rings. Set two button components end to end with a drum bead link between them. Hold an open ring in the pliers, add a "trailer hitch" from one Knot of a button link, add a loop of the drum bead link, and close the ring. Repeat at the other end of the drum bead link. Repeat with the other two button link components and the other drum bead link **c**. You will have two sections of chain, each with three bead links.

Add the flower link in the center

Open 10 16-gauge 3mm rings. To add the flower component between the two sections of chain just assembled, add a ring to the "trailer hitch" at one end of a section of chain and close it. Add three more rings, one at a time, to make a short mini-chain. Use the fifth ring to connect this mini-chain to the "trailer hitch"



of the flower component. Repeat this step, using five rings to connect the other section of chain to the other side of the flower component. See the red dots **d**.

4

Connect Knots in pairs

Join the remaining eight Knots in pairs: Open 12 16-gauge 3mm rings. Take two Knots and orient them so the nose of one is pointing to the nose of the second. Use three rings, one by one, to connect the 4mm rings added back at the beginning of step 3. Repeat this step, making four pairs of Knots **a**.



Open 10 16-gauge 3mm rings. Connect two mini-chains together—trailer hitch to trailer hitch—just like we added the flower link. Repeat to join the other two chains together. You now have two chain sections **b**.

Add Knot pairs to the side chains

To add these chain sections to the sides of the necklace, open 10 rings. Use five of them in a 1-in-1 mini-chain to add a chain section to one side of the necklace (trailer hitch to trailer hitch). Repeat to add the second chain section to the other side of the necklace.



Attach the clasp

Open two of the main rings used in the Byzantine Knots—16 gauge 6.25mm ID. Review adding a hook-and-eye clasp (p. 110). Insert a ring through the end trailer hitch and through the loop on the hook part. Close it. Insert the other ring through the end trailer hitch on the other side of the necklace, and close it **c**.

Make adjustments

Add length by adding additional Byzantine Knots, one to each side. Each set of two Knots (one on each side) will add 2 in. to the length of the necklace. Each additional Knot requires 10 16-gauge 6.25mm ID jump rings plus one 18-gauge 4mm ring, and three 16-gauge 3mm rings to join it to the previous Knot.

TIP

I prefer to orient the parts of a clasp on a necklace so that my right hand manipulates the hook (or toggle bar) when I put on the necklace.

CELTIC MAZE



This necklace always receives compliments. It's unusual—it features a flat, square weave that echoes the shape of the dichroic cabochons, and it stays in place without twisting when worn.

WEAVE

Celtic Labyrinth

DIMENSIONS

24¼ in.

MATERIALS

Jump Rings

- **22** 14-gauge 7.5mm ID jump rings (A)
- **33** 16-gauge 6mm ID jump rings (B)
- **176** 22 18-gauge 5mm ID jump rings (C)
- **352** 22 18-gauge 4mm ID jump rings (D)
- **44** 22 18-gauge 2.5mm ID jump rings (E)

Cabochons

- **10** 16x13mm cabochons (www.mexico925.com)

Findings and Supplies

- **10** silver-plated metal connector plates
- foldover clasp
- E6000 or two-part Epoxy

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers

Plan of action:

- ❑ Glue the cabochons to the connector pads
- ❑ Make 11 sets of two Celtic Labyrinth segments
- ❑ Build the necklace
- ❑ Make adjustments
- ❑ Attach the clasp
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round, half-hard, Argentium silver wire. These ring sizes also work for 10% silver filled and jeweler's bronze.

Note

One Disk and Loop Bracelet (#40-347-3) from Rings & Things can be taken apart to retrieve 11 metal pads for gluing the cabochons and a clasp. Do not use the linking rings.

1

Prepare the cabochons

Use chainnose and/or roundnose pliers to carefully open the two loops on the underside of each of the pads of the disk/loop bracelet. Unhook the pads and re-close the loops. Set aside the pads and the foldover clasp to use in this project.

Following manufacturer's instructions, carefully glue the cabochons to the metal pads. Let the glue set.



2

Make the chain mail

Review the Celtic Labyrinth weave instructions (p. 92). Follow steps 1–14 to make two segments linked together. The pair of segments will start and end with a 16-gauge 6mm jump ring **a**. Make 11 two-segment mini-chains.

Open the end jump ring of a two-segment chain, insert it through a loop of a cabochon link, and close the ring **b**. Repeat to add a mini-chain to the other side of the cabochon link **c**. Continue alternating a cabochon and a two-segment link until you have used 11 mini-chains and 10 cabochon links.

Make adjustments

Add or remove individual Celtic Labyrinth segments at each end of the chain (1½ in./pair), or add or remove sets of one cabochon and two Celtic Labyrinth segments (2 in.) before adding the clasp.

Attach the clasp

Open the ring at one end of the necklace, go through the loop of the foldover clasp, and close the ring. This clasp will fold over the ring at the other end of the necklace.



EXPLORE AND EXPERIMENT

Earrings

Make two single Celtic Labyrinth segments. Add small square dichroic cabochons and the earring posts with 18-gauge 2.5mm jump rings. Alternatively, the earrings could be simply one pattern segment attached to an earring finding—no cabochon required.



Bracelet

This bracelet is made with the same gauge rings as the necklace.

CLASSIC CHAINS



Classic, elegant chains hang perfectly when paired with a very special clasp. For a subtle look, wear the clasp in the back, or make a statement by styling it to the front.

WEAVES

Chinese Knot (aka Pheasible), Jens Pind Linkage

DIMENSIONS

The longest chain is 20¼ in., the middle chain is 18½ in., and the shortest one is 17½ in.

MATERIALS

Jump Rings

- **312** 18-gauge 3mm ID jump rings (Chinese Knot)
- **627** 18-gauge 3mm ID jump rings (Jens Pind Linkage)

Beads and Findings

- 20x18mm three-strand rhodium plated baguette box chain clasp (Alacarte Clasps)

Tools

- 2 pairs of pliers (flatnose, chainnose, bentnose)

Plan of action:

- ❑ Make the Chinese Knot chain
- ❑ Make two Jens Pind chains
- ❑ Attach the clasp
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round, half-hard, Argentium silver wire. These ring sizes also work for 10% silver-filled wire, and jeweler's bronze.

1

Make the chains

Review the Chinese Knot weave instructions (p. 95). Follow steps 1–12 to make a chain with 28 knots linked together **a**. (Each segment has 10 rings—add one ring to join two segments. Three linked knots are 2 in.)

Review the Jens Pind Linkage weave instructions (p. 103). Follow steps 1–11 to make one chain with 97 segments and one chain with 112 segments **b**. (Each segment has three rings. 5½ patterns measure 1 in.)

Attach the clasp

Pick up an open ring with your pliers and use it to attach the Chinese knot chain to the middle ring of the clasp. Note that I added another connector ring on both ends—this adjusts the length so it sits midway between the other two chains. Keeping the chain straight (untwisted), repeat to add the other end to the other side of the clasp.

Open the end ring of the shortest Jens Pind chain and attach it to the top loop of the clasp. Repeat on the other end with the other side of the clasp. Connect the longer Jens Pind chain in the same manner **c**. Check that none of the chains were accidentally twisted.

Make adjustments

It took some trial and error to get the chains to sit evenly spaced. For the Chinese Knot, three complete segments measure 2 in. For Jens Pind, 2 in. of chain has just under 11 units. To increase or decrease the length of the necklace, start by making the middle



chain the length you want, then make the shortest one 1⅛ in. shorter, and the longest one 1¾ in. longer.

It's easier to start with the middle chain because it has the longest segment length. With the outside chains (Jens Pind), add single rings to adjust the length.

EXPLORE AND EXPERIMENT

Bracelet

This three-strand bracelet is similar to the necklace, but it has two strands of Chinese Knot and one of Jens Pind in the middle. The clasp is a three-strand slide clasp.

Another option is to make a single strand bracelet that uses a heavier weight of jump rings. For Jens Pind, you'll need 87 14-gauge 5mm rings for an 8½-in. bracelet, not including a clasp. For Chinese Knot, you'll need 110 16-gauge 4mm rings for an 8½-in. bracelet, not including a clasp.



Earrings

I decided to have fun with the earrings. For each earring I made three lengths of chain using the same weaves as the bracelet. The Jens Pind lengths each have nine pattern repeats. The Chinese Knot length has two knots and then a connector ring added to each end of the chain. The 3-to-1 connector bar started out as a clasp, but I cut off the hook and extender chains. I used two 18-gauge 2.5mm rings to connect the bar to an earring post. Then I re-opened the end ring of each chain and connected them to the three loops on the bar.

CELTIC STARS FANTASY



This fantastic pendant by Susan Hood demanded color to look its best. The end result is serendipity at its finest.

WEAVES

Celtic Star, Chinese Knot

DIMENSIONS

21½-in. long with a 2-in. pendant

MATERIALS

Jump Rings

Four Medium Stars

- **60** 16-gauge 6mm ID jump rings, black (L)
- **44** 18-gauge 4mm ID jump rings, baby blue (M)
- **40** 18-gauge 4mm ID jump rings, black (M)
- **20** 20-gauge 3.25mm ID jump rings, black (S)

Two Small Stars

- **30** 18-gauge 5mm ID jump rings, baby blue (L)
- **22** 20-gauge 3.25mm ID jump rings, silver filled (M)
- **20** 18-gauge 3.25mm ID jump rings, baby blue (M)
- **10** 18-gauge 3mm ID jump rings, baby blue (S)

Connectors

- **48** 18-gauge 3mm ID jump rings, silver filled
- 16-gauge 4mm ID jump rings, silver filled (for pendant)

Chinese Knot Side Chains

- **440** 18-gauge 3mm ID jump rings, silver filled

Beads and Findings

- 36mm diameter pendant focal bead
- 4mm round bead, sterling silver
- 3-in. headpin with a 3mm bead end (Saki Silver)
- 2-strand box clasp with safety, sterling silver

Plan of action:

- ❑ Make the Celtic Star components
- ❑ Make the Chinese Knot side chains
- ❑ Connect the stars
- ❑ Add the side chains
- ❑ Attach the clasp
- ❑ Wire wrap the pendant bead
- ❑ Attach the pendant
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers
- flush cutters

1

Chain mail stars

This necklace features six Celtic Stars in two different sizes. Review the Celtic Star weave instructions (p. 94). Follow steps 1–12 to make each star. Make four medium stars (black and sky blue) **a**. Make two small stars (silver and sky blue) **b**.



Make the side chains

A pair of Chinese Knot side chains on each side connect the clasp to the top stars. Review the Chinese Knot weave instructions (p. 95). Follow steps 1–10 to

make the first knot, and steps 11 and 12 to link the knots together as you work. Make four chains, each with 10 knots **c**.



2

Join medium star (top) to small star

Open 10 connector rings. Lay the stars flat, and prepare to connect the new medium star to the top of the small star. Notice that to connect the top of the small star, you can't use the points because they are not in the right position. Instead, connect to the two single L rings (see the red dots) on each side of the center star point. Starting with one single ring, add four rings in a chain. Connect the fifth ring to the chain and to a single L ring of the small star. Repeat on the other side.

Join small star to medium star (bottom)

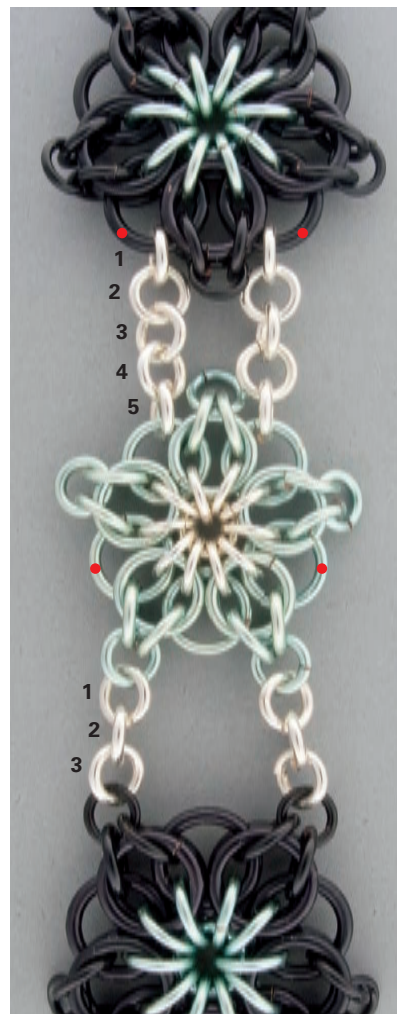
Open six connector rings. Place one ring through a small outer ring on the small star and close the ring. Add a ring to the one just added. Add a third ring but also insert this third ring through a small outer ring on the medium star, and close the ring. Repeat on the other side. (Notice that you're joining the stars by linking two points together.)

Repeat these two steps to connect the other set of stars together.

Join the side chains and attach the clasp

Open four connector rings. Position three-star chain vertically, so that the medium star with two star points is at the top. Set out two Chinese Knot side chains. Use one connector ring to connect each of the top two star points to a Chinese Knot side chain. Repeat to connect the other set of stars to the other two side chains. (See photo, p. 61, for reference.)

Review attaching multistrand clasps. Open the clasp into two parts. Each part has two small loops. Open a single jump ring at the end of the Chinese Knot side chain (but don't remove it). Insert it through a clasp loop. Re-close the jump ring. Add the end of the other chain, connect the other loop to the same clasp part. Repeat these steps to add the other set of chains to the other half of the clasp.



Note

The jump rings for this project were made from round, 10% silver-filled wire, black enameled copper, and baby blue enameled copper (Parawire). These ring sizes also work for 10% silver filled and for jeweler's bronze. (The blue rings were kept to 18 gauge so only one gauge is required.)

2

Wire wrap the pendant bead

On the 3-in. headpin, string the focal bead and the silver bead. Make a wrapped loop **a**.

Attach the pendant

Open 12 connector rings and one 16-gauge 4mm ring. Add the single 16-gauge ring to the loop of the wire-wrapped pendant bead. Take one set of chains and add two pairs of connector rings (2-in-2) to the bottom point of the bottom star. Repeat with the other set of chains.

Use two connector rings (side by side) to attach the end of one set of chains to the ring at the top of the pendant. Use two more rings to attach the other set of chains to the same ring **b**.

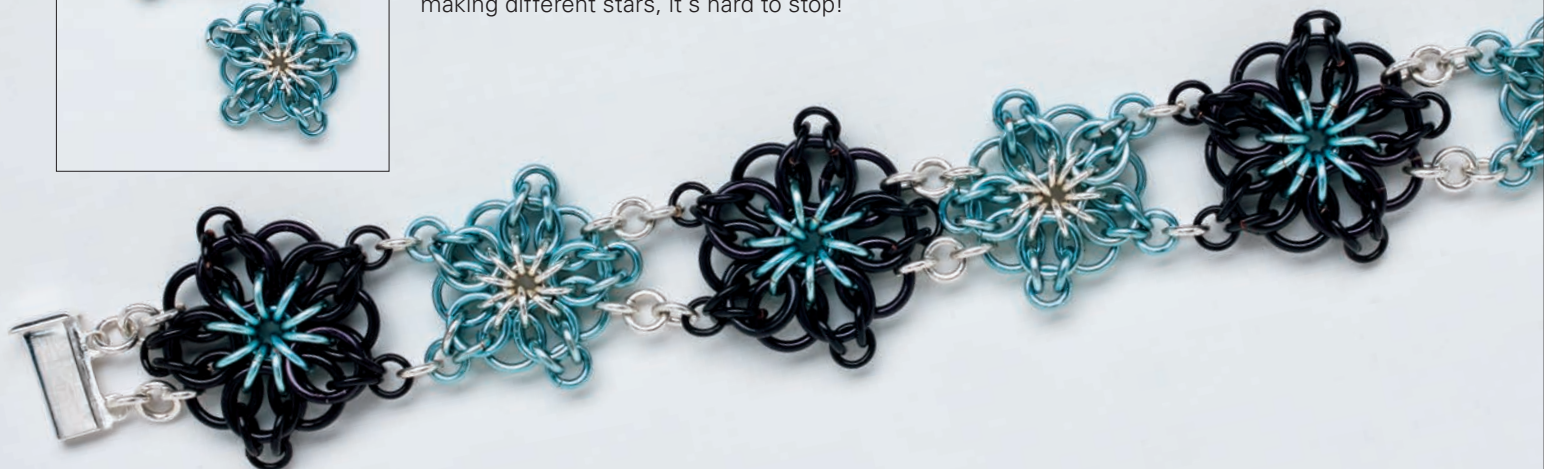
Make adjustments

Make the necklace longer by adding Chinese Knots to the end of all four chains. Each set of four knots will add 1¼ in. to the length. Each single knot requires 11 rings.



EXPLORE AND EXPERIMENT

Think about other ways to combine Celtic Star components. The stars could all be the same color or different combinations. A star can be a pendant hanging from a chain, or several can be arranged to make an asymmetric necklace (see the Celtic Bronze necklace project, p. 68). Once you start making different stars, it's hard to stop!



FOXY HEART

The colors of a special, sideways heart by glass bead artist Deborah Read are reflected in a rope of silver, amethyst, and onyx beads that can be worn long or twined around a chunky Foxtail chain.



WEAVE

Foxtail

DIMENSIONS

26 in. with a 1-in. pendant

MATERIALS

Jump Rings

- 524 18-gauge 5.5mm ID jump rings
- 2 18-gauge 3mm ID jump rings
- 16-gauge 4mm ID jump ring
- 14-gauge 9mm ID jump ring

Beads and Findings

- 4x33mm pendant focal bead
- 5 10mm round amethyst beads
- 10 6mm round amethyst beads
- 40 4mm sterling donut beads
- 60 small amethyst stone chip beads
- 20 6mm round onyx beads
- 4 7mm textured sterling beads
- 8 5.5mm sterling saucer beads
- 40 3mm round sterling beads

Other

- 30 in. flexible beading wire, .014 in., 49 strand
- 2 2x2mm sterling silver crimp beads

Plan of action:

- ❑ Make the Foxtail chain
- ❑ String the beaded strand
- ❑ Finish the beaded strand
- ❑ Attach the clasp to both strands
- ❑ Attach the pendant
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

- 2 3mm sterling silver crimp covers
- 2 sterling silver wire guardians
- hook-and-eye clasp

Tools

- 2 pairs pliers (flatnose, chainnose, bentnose)
- pair of crimping pliers
- pair of wire cutters

Note

The jump rings for this project are round Argentium silver wire. The 18-gauge wire is half-hard. These ring sizes also work for other metals.

1

Make the chain

Review the Foxtail weave instructions (p. 100). Follow steps 1–8 for 130 repeats **a**.



String and finish the beaded strand

The beaded strand is a little longer than the Foxtail chain so it can either twist a few times around the chain or be worn untwisted. Cut the beading wire about 3 in. longer than your desired finished length. Follow the photo on p. 65 and **b** to string a pattern of gemstones (3¾ in.) and a pattern of silver beads (1¾ in.). Repeat until the desired length is reached. Secure the ends. Review the techniques for adding crimps, wire guardians, and crimp covers (p. 109), and finish each end of the beaded strand.



2

Attach the clasp

At the end of the Foxtail chain you will see the edges of a pair of rings. Push the rings one to each side and you'll see the edges of another pair of rings. Use these rings to attach the clasp. At one end of the necklace, attach the loop on the hook part of the clasp. At the other end, attach the soldered ring. This can be tricky to do because you have to re-open those two rings (one at a time) to slide each clasp part into place, but it's worth the trouble to hide the connections **a**.

Use an 18-gauge 3mm ring to attach one wire guardian at the end of the beaded strand to that same pair of rings. Twist the beaded strand a few times around the Foxtail strand. When you're satisfied, connect the wire guardian at the other end.

Attach the pendant

Insert the 16-gauge 4mm ring through the glass loop of the heart bead and close it. Insert the 14-gauge 9mm ring through that small ring and then around the Foxtail chain. There will be enough room for the pendant to slide easily along the chain **b**.

Make adjustments

To make the necklace longer or shorter, it is necessary to make adjustments to the beaded strand first—then it's easy to lengthen or shorten the Foxtail section to match by adding or removing pattern repeats. To change the length of the beaded section you need



to change the length of either the purple or the silver repeating pattern. You could change the number or the size of a particular bead, but I recommend keeping the five sets of purple beads and the four sets of silver beads because that places the set of purple beads right above or below the purple pendant bead.

Bracelet

This bracelet uses the same size rings as the necklace. To tie things together I added some purple, black, and silver bead charms that dangle from the clasp.

Earrings

For a delicate look, I used 20-gauge 4.5mm ID rings (six pattern repeats), and then made a slight taper at the end by using 20-gauge 4mm rings for three pattern repeats.



EXPLORE AND EXPERIMENT



CELTIC BRONZE



This is an eye-catching, non-traditional, asymmetric necklace—one side has a two-strand Japanese style chain, while the other features three Celtic stars in graduating sizes and a single chain. Best of all, the two stands are connected together in three places so they retain a neat appearance.

WEAVES

Celtic Star, 4-in-2

DIMENSIONS

21 in. (53cm)

MATERIALS

Jump Rings:

Large Star

- **15** 14-gauge, 8mm ID (L)
- **21** 16-gauge, 5.25mm ID (M)
- **5** 18-gauge, 3.5mm ID (S)

Medium Star

- **15** 16-gauge, 6.0mm ID (L)
- **21** 18-gauge, 4.25mm ID (M)
- **5** 20-gauge, 3.0mm ID (S)

Small Star

- **15** 18-gauge, 5.0mm ID (L)
- **21** 20-gauge, 3.25mm ID (M)
- **5** 22-gauge, 2.5mm ID (S)

Neck Chain

- **5** 16-gauge, 8mm ID (L)
- **202** 18-gauge, 5mm ID (M)
- **232** 20-gauge, 2.8mm ID (S)

Star Connector Chains and Clasp Attachment Rings

- **24** 18-gauge, 3mm ID (C)

Other

- antique gold plated pewter toggle clasp (Sunburst, TierraCast)

Plan of action:

- ❑ Make the short neck chains
- ❑ Connect the short neck chains
- ❑ Make two long neck chains
- ❑ Connect the long neck chains
- ❑ Make small, medium, and large stars
- ❑ Connect the stars
- ❑ Adjust the length of the chains
- ❑ Attach the clasp
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)

Note

The jump rings for this project were made from round, half-hard, jeweler's bronze wire. These ring sizes also work for Argentium silver, 10% silver filled, copper, and enameled copper wire.

1

Make the short neck chains

Review the European 4-in-2 weave (p. 100). Open 20 medium rings and close 24 small rings. Follow steps 1–4, but alternate medium (M) rings with small (S) rings. In step 2, hold an open M ring and add two S rings. Close the ring. In step 3, add another M ring. Continue until you have five pairs of M rings and six pairs of S rings (see tip, p. 100). Make a second identical chain **(a)**.



Connect the short neck chains

Open three large rings. Hold an open large (L) ring in your pliers and go through two S rings at the end of one chain segment and two S rings at the end of the other segment to make a single length of chain. Close the ring. Add a L ring to each end of this chain **(b)**.

2

Make two long neck chains

These chains connect the large star to the clasp. Open 144 M rings and close 150 S rings. Follow the same steps (see tip, p. 100) to make eight sections of chain. Each piece of chain will start and end with a pair of small rings.

A Make two chains with six pairs of M rings and seven pairs of S rings.

B Make four chains with five pairs of M rings and six pairs of S rings.

C Make 1 chain with 14 pairs of M rings and 15 pairs of S rings.

D Make 1 chain with 16 pairs of M rings and 17 pairs of S rings.

Connect the long neck chains

The photo on p. 72 shows how these chain segments will be connected. Notice that there are three interior joins and two end joins.

Make interior join 1

Set out two A chains and two B chains and arrange them as in the large photo on page 72 (top, right). Set out four open M rings and two open S rings. Connect the top two chains with a M ring (red dot) and connect the bottom two chains with a M ring. Connect those two M rings with a pair of S rings. Last, double up the M rings, making sure to pass through all three pairs of small rings **a, b**.



Make interior joins 2 and 3

This step adds two more B chains, and then the C and D chains. Follow the same process as Join 1, using the large photo on page 68 and the process photo on p. 72 as your guide, to make "Interior Joins" 2 and 3 **a, b**.

3

Make the end joins

Take the two long chains and arrange them like the photo, p. 68. At one end, set 1 L, four M and six S rings—all open. Add a M ring to the pair of small rings at the end of both chains. Add two S rings to each of these M rings. Connect the two M rings with two S rings. Put an open L ring through the pair of small rings at the end of both chains. Last, double up the M rings, being sure to pass each one through three pairs of S rings. Repeat this step to make the end join at the other end of the neck chains.



4

Make the three stars

Review the Celtic Star weave (p. 94). Using the ring sizes in the Materials List, make a Large, Medium, and Small star following steps 1–12.



5

Join the short neck chains to the Small Star

Open 17 C rings (18 gauge, 3mm). Join the Small Star to the short Neck Chain with three C rings. Remove one of the tiny outside rings from the star and replace it with a 3mm ring. Use two 3mm rings to connect it to a large ring at one end of the short neck chain. See the red dots **a**.

Join the Medium Star to the Small Star

Lay the stars as in **b** to prepare to connect the Small Star to the top of the Medium Star. Notice that you can't use the outside small rings on the medium star because they are not in the right position. Instead, connect to the two single L rings (see the red dots) on each side of the center small outer ring. With an open C ring, go through a L ring on the Medium Star. Add another ring. Add a third ring, but insert it through a small outer ring on the Small Star. Close the ring. Repeat on the other side.

Join the Large Star to the Medium Star

With an open C ring, go through a small outer ring on the Large Star, and close the ring.



Add another ring. Add a third ring, but insert it through a small outer ring on the Medium Star, and close the ring. Repeat on the other side **b**.

Join the long neck chains to the Large Star

Open two S rings and two C rings. Insert two S rings into the small outer ring at the bottom of the Large Star, and close them. See the red dot. Insert the two C rings into the single large ring on one side of the center small outer ring. See the blue dot.

Reopen the large ring at the end of the neck chains, pick up the two pairs of rings you just added, and re-close the large ring **c**. See photo, p. 72.



6

Attach the clasp

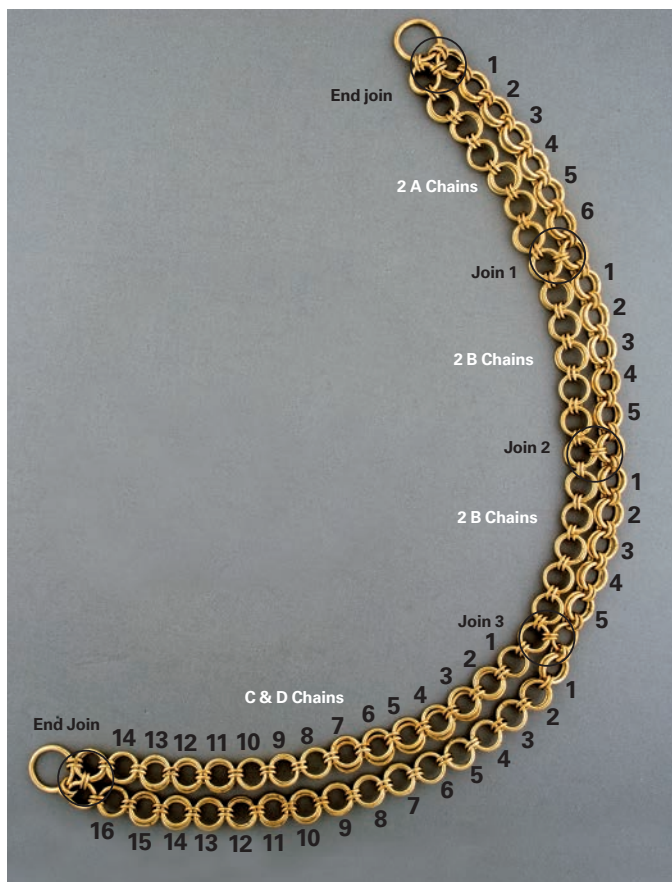
Review attaching toggle clasps, (p. 110). Open two M rings, two C rings, and close four S rings. Re-open the large ring at the end of the short chain, add two closed S rings, and re-close the ring. Pick up an open M ring, go through those two S rings, add two more S rings, and close the ring. Double-up the M ring. Pick up an open C ring, go through the end pair of S rings and close the ring. Pick up another open C ring, go through the previous ring, add the small ring on the ring part of the clasp, and close the ring. You've finished one side of the necklace!

Open three C rings. Put the first one through the small ring on the bar of the clasp and close it. Add two more to make a mini-chain. Re-open the large ring, pick up the end ring of the mini-chain, and then re-close it. The necklace is now complete!



Make adjustments

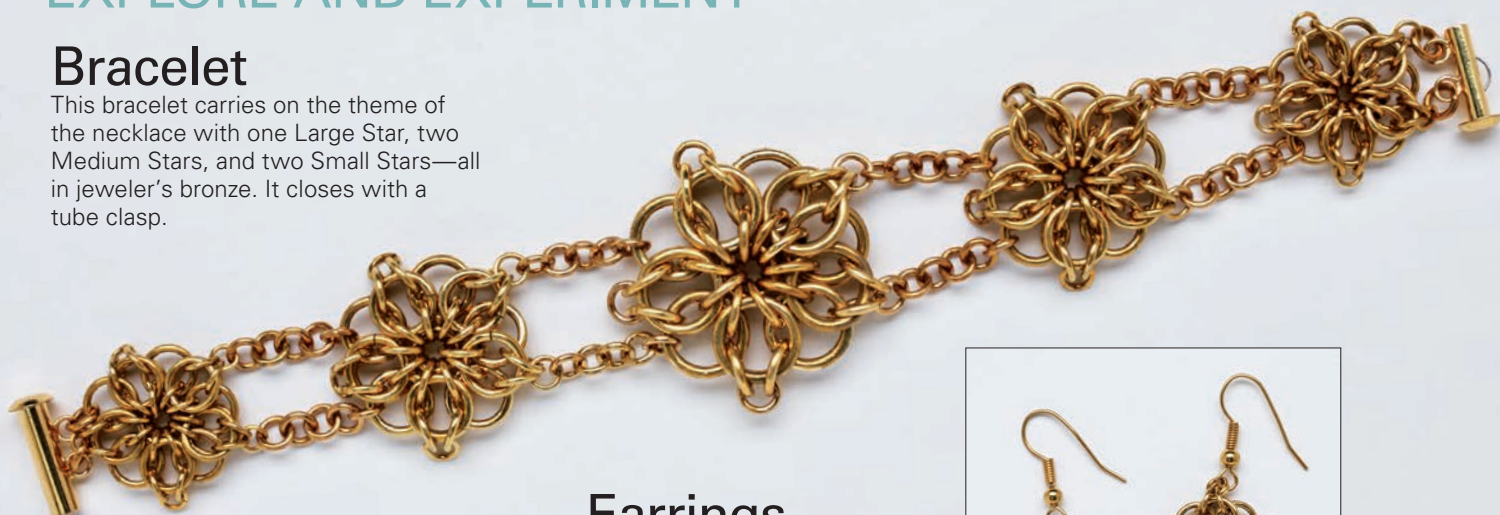
To increase the length, add a series of M and S neck chain rings right before the clasp parts. Be sure to add the same length to each side of the necklace.



EXPLORE AND EXPERIMENT

Bracelet

This bracelet carries on the theme of the necklace with one Large Star, two Medium Stars, and two Small Stars—all in jeweler's bronze. It closes with a tube clasp.



Earrings

For an easy pair of earrings, make two stars and add them to earring findings. These are Small Stars, but they could be medium or large!





Byzantine Drama

The Byzantine weave is a classic favorite because it so versatile. This necklace is not ornate. Instead, it's simple and surprising. It was fun to balance the two sides and create an interesting piece of jewelry featuring the work of glass bead artist Maureen Ross Henderson from Delta, Ontario.

WEAVE

Byzantine

DIMENSIONS

24 in.

MATERIALS

Jump Rings

- **320** 16-gauge 4.5mm ID jump rings
- **4** 14-gauge 8mm ID jump rings (adjust size to fit the disk bead)
- **6** 16-gauge 3mm ID jump rings

Beads and Findings

- 27mm round, clear, art glass bead
- **2** 23mm round, clear, art glass beads
- **2** 26x6mm disk shape, clear with black center, art glass beads (large)
- **2** 21x5.5mm disk shape, clear with black center, art glass beads (medium)
- **4** 19x3mm disk shape, black, art glass beads (small)
- 12 in. 20-gauge soft Argentium silver wire
- toggle clasp

(all art beads from Thornburg Bead Studio)

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers
- wire cutters

Plan of action:

- ❑ Make the Byzantine chain sections
- ❑ Wire wrap the round beads
- ❑ Connect the bead links and chain sections
- ❑ Make adjustments
- ❑ Attach the clasp
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round, half-hard, Argentium silver wire. These ring sizes also work for 10% silver-filled, copper, jeweler's bronze, and enameled copper wire. I used 16-gauge 4.25mm ID jump rings in Argentium silver for these projects, but this makes a tight weave. For softer metals like copper you must use 4.5mm ID jump rings.

1

Make the Byzantine chain sections

Review the Byzantine weave instructions (p. 88).

Create six pieces of Byzantine chain as follows:

A seven and a half segments

B one segment

C one segment

D six segments

E one and a half segments

F eight and a half segments



Wire wrap the round beads

You'll make three beaded links. Each link has a flat disk bead, a round bead, and another flat disk bead. Two links use the small round beads and the small disk beads. One link uses the large round bead and the large disk bead. These beads are strung on a piece

of 20-gauge wire with a wrapped loop on each side. Make the loops large enough to hold two 16-gauge rings. Allow approximately 1½ in. of wire for each wrapped loop plus the length of wire needed to pass through the three beads.



Connect the bead links and chain sections

Open four 14-gauge 8mm jump rings. Add two rings through each of the two medium disk beads.

Chain A: Open one ring from the pair at the end of Chain A. Add the loop of a small bead link and close the ring. Repeat with the second ring.

Chain B: Add chain section B to the other side of the same bead link by opening and closing the pair of rings at the end. Repeat to add the other end of chain B to the other small bead link.

Chain C: Open one ring from the pair at the end of chain C. Add the remaining loop of the small bead segment, and close the ring. Repeat with the second ring. Open two 16-gauge 4.25 rings. Hold an open ring in your pliers, add the end pair of rings of chain section C and add a large ring that goes through a disk bead. Close the ring.

Chain D: Add chain section D to the other side of the same disk bead. One by one, open the end pair of rings of chain section D and add a loop of a large bead link.

Chain E: One by one, open the end pair of rings of chain section E and add the other loop of that bead link. Open the other end pair of rings of chain section E and add the large ring that goes through a disk bead. Close the rings.



Chain F: Add section F to the other side of the disk bead with a 16-gauge 4.5mm ring.

3

Make adjustments

Note that a toggle clasp will add about 1 in. to the length. To reduce or increase the finished length of the necklace, remove or add multiples of half segments from each side, next to the clasp. A complete segment measures just over 1 in. and requires 12 jump rings.

Attach the clasp

Review the technique for attaching a toggle clasp (p. 110). Open the six 16-gauge 3mm jump rings. Use one ring to connect the end pair of rings to the clasp ring. Use five rings to attach the clasp bar.



EXPLORE AND EXPERIMENT



Bracelet

Make a heavy Byzantine bracelet with the same ring size as the necklace, and choose a coordinating toggle.



Earrings

Make a single Byzantine segment and connect it to an earring finding. Here I've used a simple but decorative lever back, attaching it with a small jump ring made with fine enough wire to fit through its hole. At the base I used a heavy jump ring with a large ID to add a black art glass disk bead.



JAPANESE GARDEN

This asymmetric necklace is based on the ancient Japanese 12-in-2 weave, combined with delightful flowers and beads from the art glass bead studio of Nikki Thornburg. The weave creates a very versatile component—one flower makes a lovely earring (with or without an added drop bead) or a series of flowers can be linked one to the next to make a bracelet.

DIMENSIONS

17½ in.

WEAVE

Japanese 12-in-2

MATERIALS

Jump Rings

- **238** 18-gauge 5mm ID jump rings (large)
- **422** 20-gauge 2.8mm ID jump rings (small)
- **2** 14-gauge 12mm ID jump rings
- **2** 14-gauge 10mm ID jump rings
- **2** 16-gauge 7mm ID jump rings
- **3** 16-gauge 6mm ID jump rings
- **10** temporary rings (different color metal, any gauge 4mm or larger)
- 16-gauge 5mm ring

Beads and Findings

- 40mm flower
- 28mm flower
- 18mm flower
- **3** 10mm rondelle beads
- silver drop bead
- 14mm sterling silver lobster clasp

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)

Plan of action:

- ❑ Make the flower components
- ❑ Build the center section
- ❑ Build the two side chains
- ❑ Add the beads
- ❑ Add the clasp
- ❑ Make adjustments
- ❑ Explore and experiment: bracelet and earrings

Note

The jump rings for this project are round sterling silver wire. The 16–20 gauge wire is half-hard; the 14-gauge wire is soft. These ring sizes also work for Argentium silver and 10% silver-filled wire. (For jeweler's bronze or for fully hardened copper rings, increase the size of the larger 5mm rings to 5.25mm ID.)

1

Make flower components

This necklace is built with Japanese Flower segments. Each flower segment uses 14 large rings and 24 small ones. Review the Japanese 12-in-2 weave instructions (p. 101). Follow steps 1–8 and make 15 flower components **a**.

Build the center section

Set out five flower components. Open 24 small rings, two large rings, and 10 temporary rings. Place two flowers side by side **b**. Join each of the adjacent pairs of large rings with a pair of small rings (four total). Repeat with two flowers for two pairs of two flowers.

The fifth (center) flower creates an asymmetric V in the center section **c**. Add 10 temporary rings (bronze in photo) to help prevent errors connecting the components and beads.



1

Connect the side by side large rings that have the temporary rings with four pairs of small rings **d**. Remove those eight temporary rings **e**.

Rearrange the shape of the center component to match **f**. Add two temporary rings (see the red dots). Set out two pairs of small rings and one pair of large rings **f**. One by one, attach the two pairs of small rings to the large rings with green dots. One by one, insert

the large rings through the small rings just added. Add a temporary ring to this pair of large rings **g**.

Set out two pairs of small rings next to the temporary rings at each end of the center section **h**.

One by one, attach the two pairs of small rings. Remove those two temporary rings. See the red dots **i**.



Build the two side chains

Look at the photo (p. 77) and notice that the large art glass flower bead is on the right hand side. The chain on this side uses six Japanese flower segments. Set out six flower segments and open seven pairs (14) of small rings. Link each segment to the next with one pair of small rings. Add a pair of rings to each end of this side chain.

The left side of the necklace has a medium art glass flower bead, then one Japanese flower segment, then a small art glass flower bead, and then three Japanese flower segments. Set out three flower segments and open four pairs (8) of small rings. Link each segment to the next with one pair of small rings. Add a pair of rings to each end of the side chain. Set out one remaining Japanese flower segment and open two pairs (4) of small rings. Add a pair of rings to each side of this segment.

Add the beads

Add large jump rings to the flower beads: Large flower, add 14-gauge 12mm jump rings to opposite sides. Medium flower, add 14-gauge 10mm jump rings to opposite sides. Small flower, add 16-gauge 7mm jump rings to opposite sides.

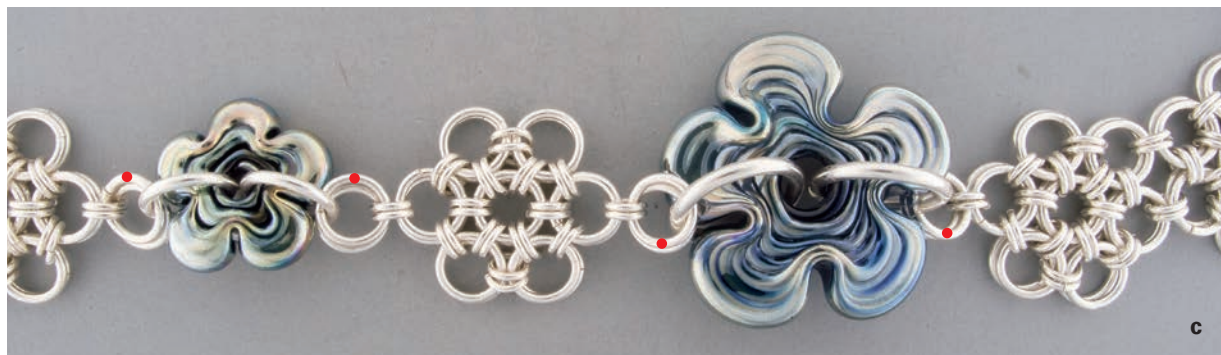
Set out the center section and the three rondelle beads. The three temporary rings mark the spots to attach the rondelle beads. Open the three 16-gauge 6mm rings and use them to attach the beads to the large rings with the temporary rings. Remove the three temporary rings **a**.

From left to right, set out the center section, then the large flower, and then the long side chain with six segments. Open two pairs of large rings (18-gauge 5mm). One by one, use these pairs of rings to connect the large flower bead to the end of the



center section and the end of the side chain. See the red dots **b**.

From left to right, set out the small chain with three Japanese flower segments, the small flower, one Japanese flower segment, the medium flower, and the center section. Open four pairs of large rings (18-gauge 5mm). One by one, use these rings to connect the small pairs of end rings to the large ring of the small flower bead and then the medium flower bead. The red dots mark the four pairs of new rings **c**. Compare your necklace with the photo on p. 77.



3

Add the clasp

On the side of the necklace with the large flower bead, use six small rings and six large rings to build a 2-in-2 chain. Connect the final pair of small rings to the small ring of the lobster clasp.

Build an extension chain on the other end of the necklace: Connect a 16-gauge 5mm ring through the hole of the drop bead. Use eight small rings and eight large rings to build a two-in-two chain. Connect the final pair of small rings to the ring attached to the drop bead.

Make adjustments

For a much longer necklace, make pairs of segments and add an equal number of segments to the end of each side chain. The lengths of the side chains



connecting to the lobster and the drop bead can be increased or decreased, depending on your preferences. Pay attention to balancing the length of the two chains so that the center front rondelle bead sits in the middle.

EXPLORE AND EXPERIMENT

Earrings

Make a flower segment, and then connect a pair of large rings to the top and to the bottom of the flower. Voilà—a diamond shape for an earring. Just add an earring finding. Accent with rondelle beads left over from the necklace!



Bracelet

Make enough flower components to go around your wrist. Lay them out so a pair of rings on one flower touches a pair of rings on the next. For this bracelet I turned them a bit so two pairs of rings on one touches two pairs of rings on the next.





LARK'S WING

This dramatic necklace looks stunning against black. It features a bail creatively made with the European 4-in-1 weave. The focal bead and an accent bead are from the Miró series by glass bead artist Susan Stortini of Toronto, Canada. The tassel and the side chains are a simple 4-in-2 weave.

WEAVES

European 4-in-1, European 4-in-2

DIMENSIONS

27 in. with an 8-in. pendant/tassel dangles

MATERIALS

Jump Rings

- **871** 20-gauge 2.8mm ID jump rings
- **7** 16-gauge 9.5mm ID jump rings
- **2** 16-gauge 8mm ID jump rings
- **5** 16-gauge 3mm ID jump rings
- 16-gauge 5mm ID jump ring

Beads and Findings

- 37mm art glass bead, main focal (W=25.5mm, D=12mm)
- 21mm art glass bead, secondary focal (W=15.5mm, D=10mm)
- **2** 8mm color coordinated spacer beads
- **3** 37x5.5mm hollow circle beads (Sardonyx)
- **2** 22mm round, sterling silver beads, matte, faceted
- **4** 4mm sterling silver donut beads
- **3** in. 20-gauge silver headpin, 3mm ball end
- **2** 1.5 in. 24-gauge silver headpins, 1.5mm ball end
- 12.5 in. 22-gauge round silver wire to wrap the silver beads and the black/focal bead combo
- 14mm silver lobster clasp

Tools

- **2** pairs of pliers (flatnose, chainnose, bentnose)
- roundnose pliers
- flush cutters

Plan of action:

- ❑ Make the side and tassel chains
- ❑ Make a European 4-in-1 triangle
- ❑ Connect the triangle as a bail
- ❑ Wire wrap the silver beads
- ❑ Assemble and wire wrap the black/art glass bead combination
- ❑ Add wrapped loops to one black bead
- ❑ Assemble and wire wrap the focal pendant bead
- ❑ Assemble the tassel components
- ❑ Link the components together
- ❑ Attach the clasp
- ❑ Make adjustments
- ❑ Explore and experiment: earrings

Note

The jump rings for this project are round sterling silver wire. The 16- and 20-gauge wire is half hard. The 22-gauge wire is dead soft. These ring sizes will also work for other metals.

Make the side and tassel chains

The side chains are made with a 4-in-2 weave **a** (also called 2-2-2). That means one pair of rings is connected to the next pair and repeated for the length of the chain. Review the 4-in-2 weave instructions (p. 100). Follow steps 1–4 and make seven separate chains:

- A 79 pairs (long side chain)
- B 44 pairs (short side chain)
- C 57 pairs (tassel chain)
- D 40 pairs (tassel chain)
- E 33 pairs (tassel chain)
- F 28 pairs (tassel chain)
- G 2 pairs (tassel chain)



The European 4-in-1 triangle-shaped bail will take 296 rings. Review the European 4-in-1 weave instructions (p. 97). Follow steps 1–10 to make a foundation row of 22 pairs of rings joined with 21 single rings. Follow steps 11 and 12 to stabilize your work. Follow steps 13–19 for direction on how to add the rings, but see the photos in steps 21 and 22 for the triangle shape. The next row has 21 rings, the next one 20, the next one 19, and so on—until you reach the last row that has only one ring. When you remove the tape, add a single ring to each end of the foundation row **b**.



Place the mesh triangle, a black circle bead, and six of the same rings used to make the triangle. Fold the point of the triangle around the inside of the bead until it meets the long flat side of the triangle. Make the connection: First, follow the column of rings from the point of the triangle up to the ring at the center of the flat edge, and use two rings to connect them together. Next, look at the columns next to that one that lay in the same direction—join the rings at both edges together with one ring in each pair. See the red dots **c**. Take two of these jump rings and use them to double



up the rings at each corner of the long side—see the red dots.

Prepare the beads

For all beads, make wrapped loops large enough to hold a 16-gauge ring, planning on 1½ in. for each wrapped loop plus the length of wire needed to pass through the beads.

Make two beaded links using the silver wire and a silver bead with a donut on each side.

Check that the art bead fits inside the circle bead. Make a wrapped loop at one end of the wire, string one hole of the circle bead, the inside beads (spacer and focal), and the remaining hole in the circle bead. Make a second wrapped loop at **a**.

This circle bead stays open. String a 1½-in. headpin from inside the circle out through a hole. Make a wrapped loop with the tail. Repeat for the second hole in the circle bead **b**.

String the focal bead and a spacer bead on a longer, heavier headpin. Make a wrapped loop above the beads **c**. Open a 16-gauge 8mm jump ring. String the wrapped loop just made and close the ring.

Assemble the tassel components

Lay out the chains made in step 1 according to length, where one is the shortest and five is the longest. Connect a 16-gauge 3mm jump ring to the end pair of each chain. Open a 16-gauge 8mm jump ring. Add the pair of links on the other end of each chain in this order: 3, 4, 1, 2, 5. Close the ring **d**.

Link the components together

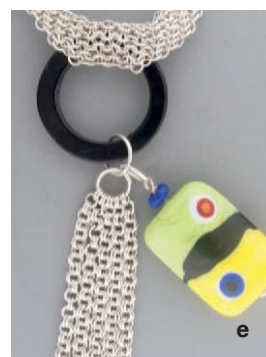
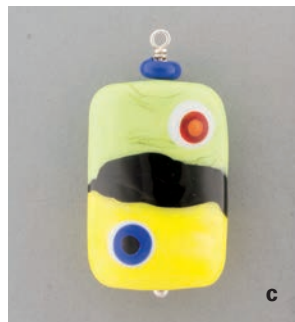
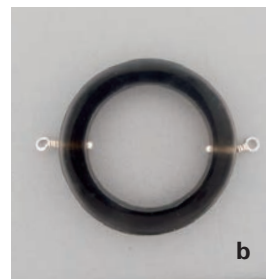
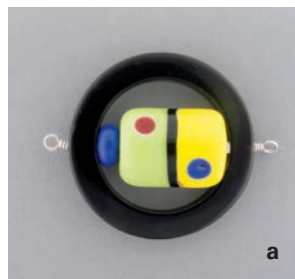
Begin in the middle and then add the sides. Open seven 9.5mm jump rings.

Hold an open ring and add the large ring at the top of the tassel, the top loop of the focal bead, and the circle bead in the mesh bail. Close the ring. Use an open ring to connect the pair of rings at one edge of the mesh triangle to a loop of the empty circle bead. Close the ring.

Use an open ring to connect the other side of the open circle bead to one end of the long side chain. Use an open ring to connect the pair of rings at the other edge of the mesh triangle to a loop on a large silver bead.

Use an open ring to connect the other side of the silver bead to the bottom loop of the circle/art bead combo. Use an open ring to connect the top of the circle/art bead combo to one loop on a large silver bead.

Use the last large ring to connect the other side of the silver bead to a longer, heavier headpin **d** to the end of the short side chain **e**. Refer to photo, p. 82, for placement.



3

Attach the clasp

Use a single jump ring to join the clasp to the end of the short chain. Review the technique for attaching lobster clasps (p. 110). Join the lobster to the right hand side of the necklace with the trigger facing outward.

(Note: reverse this if you are left-handed.) Add the 16-gauge 5mm ring to the end of the long chain.



Make adjustments

The necklace can be easily made longer by adding matching pairs of rings to each side chain.

EXPLORE AND EXPERIMENT

Earrings

These earrings use beads from the same Miró series, and are finished top and bottom with a black lampwork spacer bead (9x3mm) and a 4mm sterling donut bead. I used 22-gauge silver wire to secure the beads with wrapped loops. The tassel at the bottom has three lengths of chain: two with 11 pairs, and one with 14 pairs of 20-gauge 2.8mm ID jump rings. Both chains end with an 18-gauge 3mm ring. The chains are gathered together with an 18-gauge 4mm jump ring.



CHAIN MAIL WEAVES

Use this reference section now and in the future. I hope the step-by-step instructions will entice you to keep this book handy for making new jewelry—long after you’ve made specific pieces from this book.

Barrel

This weave is attributed to Susan Richards. It’s posted on the wetcanvas.com forum and the maillartisans.com website.

Getting started

1 Prepare several rows of five rings, each with three open and two closed.

Make sets of three rings

2 Hold one open ring with the pliers, pick up two closed rings, and close the ring (red dot) **a**. Repeat to prepare more sets of three rings. Each set of three will use two more rings to connect it to make the Barrel chain.

Make the first segment

3 Pick up an open ring and insert it through the single ring of a set of three rings and through a large paper clip or twist tie (red dot). You now have a short chain of 1 ring–1 ring–2 rings attached to a handle **b**.

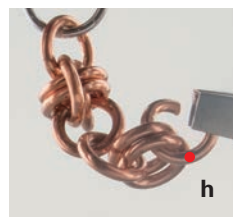
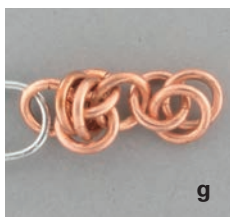
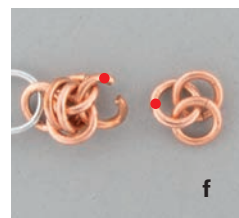
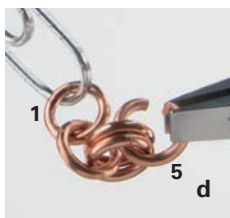
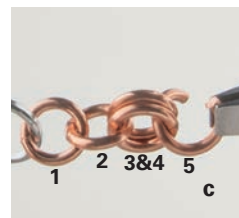
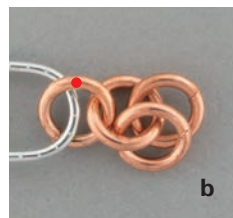
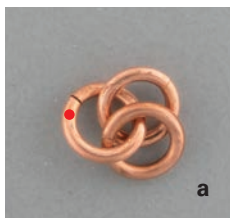
4 Put an open ring through the end pair and hold it there with your pliers **c**. Use your other hand to lift the chain upward, with ring 1 tipped away from you **d** (very important). Moving from front to back, hook ring 5 through ring 1. Close the ring **e**.

Make the second segment

5 Insert an open ring through the sides of the two horizontal rings of the previous segment (red dot), and then through the single ring (red dot) of a set of three rings **f**. Close the ring **g**.

6 Repeat steps 4 and 5, inserting an open ring through the end pair of rings **h**...and then front to back through the first ring of the segment **i** (red dot).

7 Here are the first two completed segments **j**. Repeat steps 1–6 to make additional Barrels. Finish the chain with a single ring through the sides of the last pair of horizontal rings. It will match the very first ring attached to the paper clip.



Butterfly

The Butterfly chain mail weave has a Möbius Ball of three interlocking rings that is flanked by delicate filigree wings. The large rings make the ball and eight pairs of small rings make the wings.

1 Refer to Möbius Ball instructions (p. 104) and follow steps 1–4 to make a Möbius with three large rings **a**, **b**. Don't change the order of the rings. Keep holding until you add another ring.

2 Pick up a small ring, insert it through the center of the Möbius Ball, and close it. This locks the Möbius rings in place. Add three more small rings through the Möbius **c**.

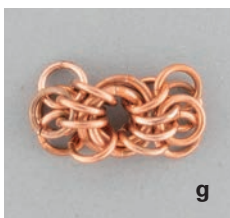
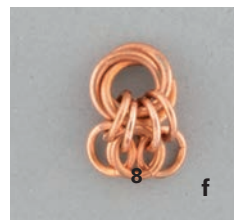
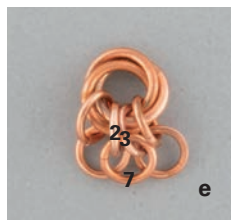
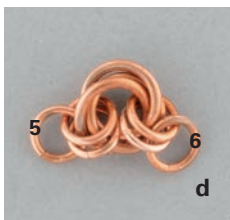
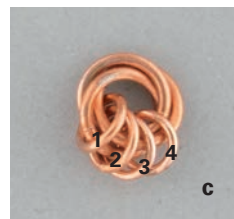
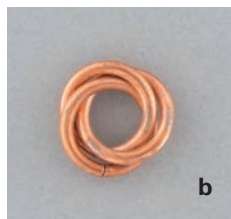
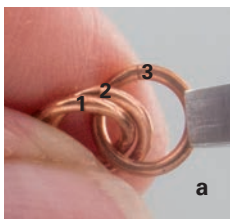
3 Pick up another small ring 5, go through two previous small rings, and close it. Repeat by adding another ring 6 through the other two rings **d**.

4 Insert a small ring 7 through small rings 2 and 3. It will sit on top of rings 5 and 6 **e**.

5 Turn your work over and insert another small ring 8 through the same two rings (2 and 3). Pretend that these last two rings are like the bread on a sandwich, and rings 5 and 6 are the tomato slices that stick out the sides of the bread **f**.

6 Repeat steps 2–5 to make the wings on the other side of the Möbius Ball. This is a complete segment **g**.

7 Repeat steps 1–6 to make additional components.



Byzantine

The Byzantine chain mail pattern is composed of segments that are linked together by a shared pair of jump rings at each end. Each complete segment uses 14 jump rings, but adjacent segments share the two end rings.

Getting started: the first half segment

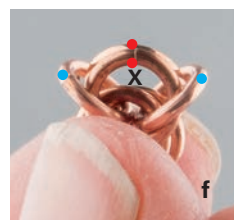
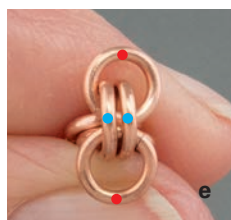
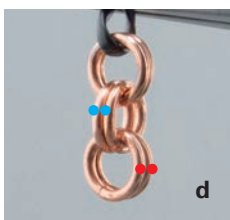
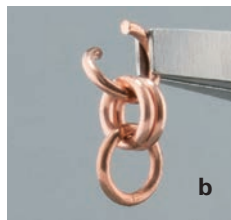
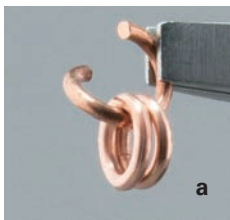
1 Close two rings and open two rings. Hold one open ring, pick up two closed rings **a**, and close the ring. This is the first half of a Byzantine segment.

2 Add the fourth ring along the same path **b**. Attach a twist tie or piece of wire to an end pair of rings so you have a "handle" to hold onto. You have a 2-2 chain **c**.

3 Add a pair: Open two rings. Insert these rings (red dots) one by one into the end pair **d** (blue dots).

Flip and fold

4 Hold the twist tie so the last two pairs of rings are above your thumb and first finger. Flip the end rings (red), one to each side. Fold these two red rings



down, and turn everything so you can hold the folded rings between your fingers **e**.

Separate and lift

5 Separate the two middle rings (blue dots). Peek between them to see the top edges of the two end rings you folded to the sides (red dots). Use an awl, a piece of wire, or something similar to help lift up those two center rings (marked with red dots). The next two rings will pass through the rings with the red dots—see the “X” **f**.

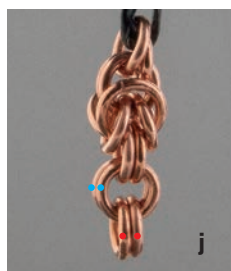
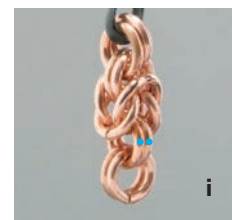
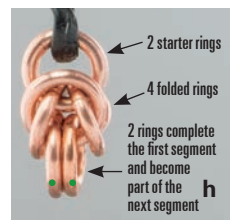
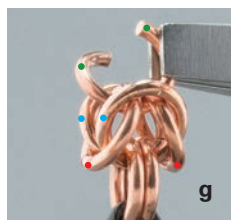
Lock

6 Open two rings. Pick up an open ring with your pliers and insert it through this path **g**. This ring has green dots. Close the ring. Add a second ring through this same space and close it **h**.

The pattern

7 Add two pairs of rings: Open six rings. Insert two rings (one by one) into the last pair (blue dots) **i**. Insert another pair of rings into that pair (red dots) **j**. You now have three linked pairs hanging down.

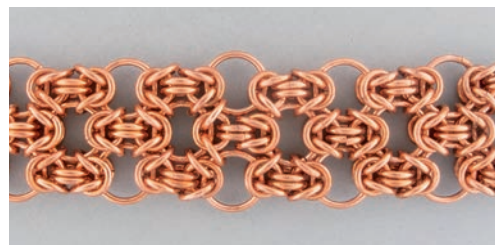
8 Fold, separate, and lock: Fold the end pair of rings. Separate the top pair. Insert two locking rings **k**.



To make a continuous Byzantine chain, keep repeating steps 7 and 8. (Add two pairs, fold, separate, and lock.)

Byzantine Filigree

This weave has three rows of Byzantine segments arranged in an offset pattern. The segments are connected on the top, bottom, and sides with larger rings, giving it a lovely filigree appearance. (This is a variation of the Bastardized weave—but I much prefer my name!)



TIP

Practice the Byzantine weave before starting this weave.

Make the starter unit

First make one Byzantine unit that is surrounded on all sides by large rings to set the width of the piece.

1 Open 10 small rings, open two large rings, and close one large ring. Add two small rings (red dots) to the large closed one **a**.

2 Add a wire handle to the large ring (red dot). Add a large ring to each small ring **b** (red dots).

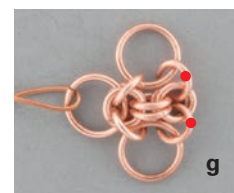
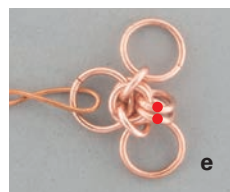
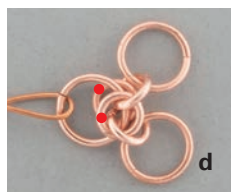
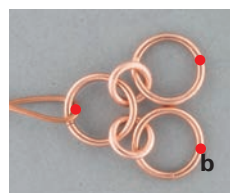
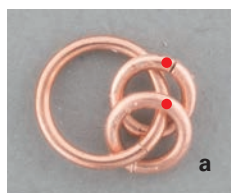
3 Add a small ring through the pair of small rings. Turn your work over and add a small ring through the same rings **c** (red dots).

4 Pull the two large rings apart and the last pair of small rings will fold upwards **d** (red dots).

5 Add two small rings through the bottom edges of the rings that folded up **e** (red dots). (Do not go through the large ring.)

6 Add two small rings through the previous pair **f** (red dots).

7 Put a small ring through a large side ring and the last pair of rings. Repeat for the other large ring **g** (red dots).



8 Add a large ring to lock in the first Byzantine segment **h**. Tricky! For help, review steps 5 and 6 of Byzantine. See tip at bottom of page.

9 Success! The starter unit is complete.

Make a Byzantine segment on each side

10 Add two small rings: one connecting two large rings (a side and a center), and the second to a large side ring **i** (red dots).

11 Add one small ring through the last pair **j** (red dots). Turn the work over and add a ring to the same pair.

12 Fold the second pair up.

13 The next pair of rings (red dots) goes through the bottom edges of the folded rings **k**. (Tricky! Review step 5.)

14 Add a pair of rings (red dots) to the previous pair **l**.

15 Add a pair of rings (red dots) to the previous pair. One ring will also go through the large center rings **m**.

16 Lock in the fold with a large ring **n** (red dot). (Review step 8.)

17 Repeat steps 11–19 to make a matching Byzantine segment on the other side **o**.

Make a Byzantine segment in the middle

18 Add two small rings (red dots). Each one goes through the center ring and one of the side rings **p**.

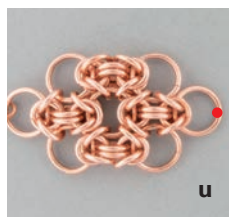
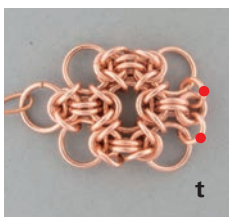
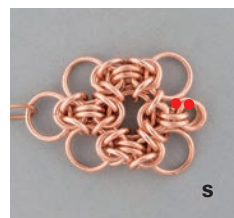
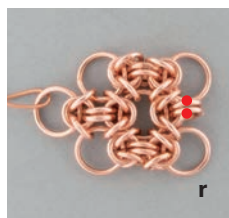
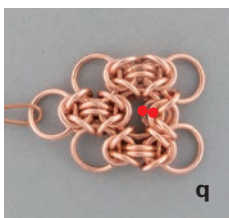
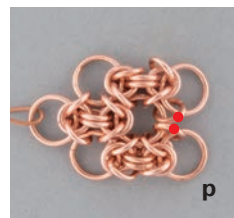
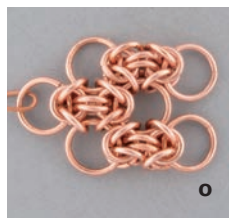
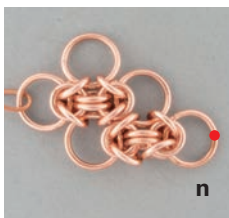
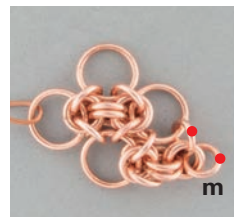
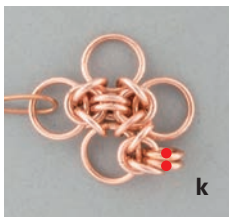
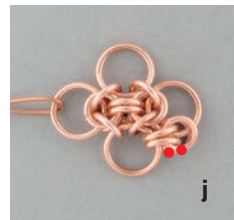
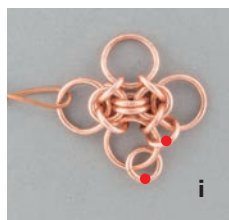
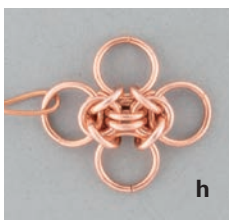
19 Add one small ring through the last pair. Turn the work over and add one more to the same pair **q** (red dots).

20 Fold the last pair up. Place two small rings through the bottom edges of the rings that were folded up **r** (red dots).

21 Add a pair of rings (red dots) to the previous pair **s**.

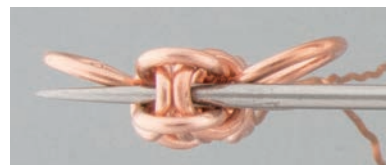
22 Add a pair of rings to the previous pair and also go through the large side rings **t** (red dots).

23 Lock in the fold with a large ring **u** (red dot). Repeat steps 10–23 for the desired length.



TIP

Use an awl or piece of wire to help you open up the space where the large ring will go. If you have trouble, unfold the pair of small rings, and refold them with the awl ready to insert.



Byzantine Knot

The Byzantine Knot is an interlocking set of five pairs of jump rings. The revised name for this pattern is “Minerva” and, according to the Maille Artisans website, was developed in 2011 by Christian Eichman. There is conflicting information on other websites about who was the creator.



1 Close four rings and open six rings for each knot.

2 Hold an open ring in your pliers. Add the four closed rings. Close the ring. Add another ring beside that one. Arrange the three pairs of rings so you can see the mini-chain **a**.

3 Use your pliers to insert a ring through two end rings. Close the ring. Add another ring beside that one. Arrange the four pairs of rings so you can see the mini-chain **b**.

4 Fold back the end pair of rings, one ring to each side. Hold the exposed rings. The rings folded to the sides have red dots **c**.

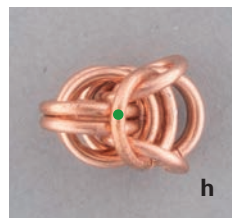
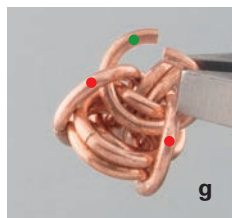
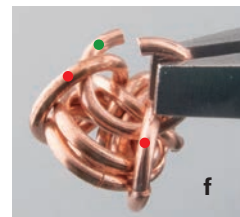
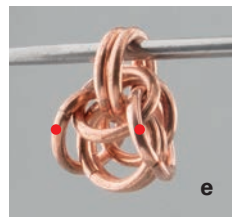
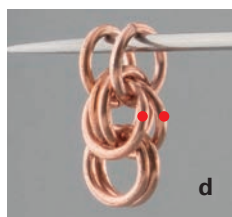
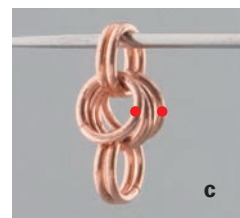
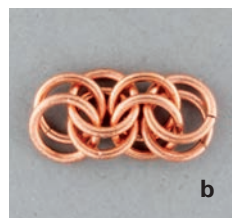
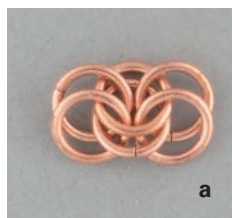
5 Fold back another pair of rings. The newly folded rings have red dots **d**.

6 Fold back a third pair of rings. The newest folded rings have red dots **e**.

7 Hold the bundle with the last two rings you folded between your thumb and first finger. Insert the first locking ring so that it passes through each of the last pair of rings you folded back (green dot) **f**. Close the ring.

8 Turn the rings around so you are working on the opposite side of the bundle and insert the second locking ring through the same two rings **g** (green dot). Close the ring.

9 Orienting the knots for connecting them together requires careful observation. In this photo, notice that both ends have an outside pair of rings pressed together as a pair. Only one end has a pair



of rings that you can separate a bit and see another pair behind them. The ring with the green dot is the locking ring inserted in step 7 or 8. To help make things visual, think of the knot as a car. The front end has a vertical “nose” (left side) and the back end has a horizontal “trailer hitch” (right side) **h**.

10 This knot (car) has simply been turned on its side—not turned around **i**.

TIP

Insert the locking ring on an angle, starting at the widest edge of the bundle. Yes, you really can insert it easily!

Celtic Labyrinth

These square segments are fascinating: they lay flat, only look complex, and can be connected to other kinds of components or findings.

Rings

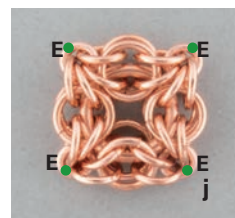
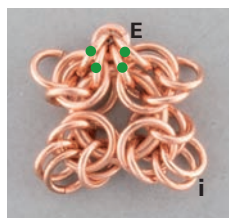
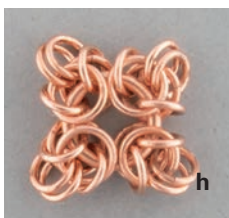
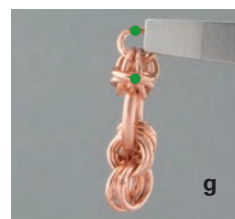
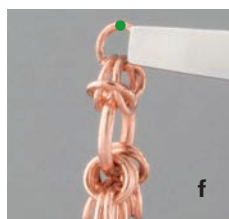
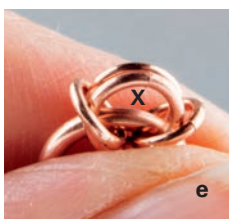
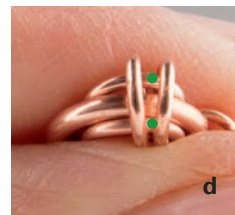
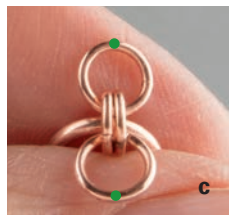
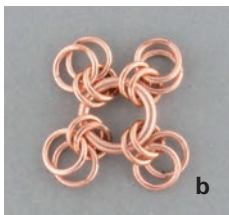
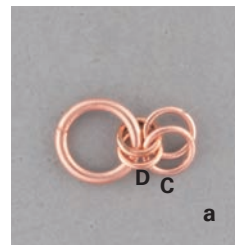
- A: 14-gauge, 7.5mm D: 18-gauge, 4mm
 B: 16-gauge, 6mm E: 18-gauge, 2.5mm
 C: 18-gauge, 5mm

Center

- 1 Close one large, heavy A ring for the center of a segment. Close eight C rings. Open eight D rings.
- 2 Hold an open D ring in your pliers. Pick up two closed C rings, go through the large center ring, and close the ring. Hold another D ring in your pliers and pass through the same two closed rings and the center ring. Close the ring **a**.
- 3 Repeat Step 2 until you have four sets of two-pair units connected to the large center ring **b**.
- 4 Open eight more of the smaller D rings. Focus on one set of two pairs of rings. Holding the center ring between your thumb and index finger, separate the outside two rings, one to each side of the center ring (see green dots) **c**.
- 5 Fold those two rings down, one to each side, and hold them with your thumb and index finger so they push upward on each side of the center ring (The rings with green dots are the folded down rings.) **d**
- 6 Separate the top pair of rings and use an awl or piece of wire to help raise the folded rings upward—ready to insert the next ring through that pair. The X marks the spot **e**.
- 7 Insert a D ring (green dot). It locks in the folded rings **f**.
- 8 Add a second ring in the same place. Both rings have green dots **g**. Note: If you know the Byzantine weave, this step will be familiar.
- 9 Repeat this step for the other three sets of two pairs. This photo shows all four sets of folded and locked pairs **h**. Compare to **b**.

Corners

- 10 Open four E rings. These four rings will create the corners of the square segment. Each of these tiny rings will pick up four rings, so this is where you'll likely need to use pliers with fine tips, such as fine chainnose, bentnose or needle-nose pliers to hold the ring and close it. Hold the ring in your pliers and pick up one of the lock rings, the next two side rings, and another lock ring from the next pair. (These four rings are marked with green dots.) Slowly ease the ring closed, re-adjusting your pliers as needed **i**.
- 11 Repeat step 10 for the remaining three corners. Photo **j** shows the four corner rings in place (green dots). Notice that this photo has been rotated a bit to re-position the four corners.



Connectors

12 Open two B rings. These are the connector rings. One will go on each side of the square segment. Pick up an open ring in your pliers. Insert it between the two rings on one side and curl it down and around, catching the sides of two rings below. Close the ring (green dot). Repeat this step with the side ring on the opposite side of the square **k** (green dot).

Second segment

13 Now we are going to build the next segment onto one side of the first one. It would be nice if you could make a bunch of segments and then join them together, but that method doesn't work! Close two larger C rings. Open two smaller D rings. Repeat Step 2 using the D rings to connect the C rings to a connector ring **l**.

14 Open two of the smaller D rings. Follow steps 4-8: Fold the outer pair to the sides and lock in the fold with the two D rings. Photo **m** shows an awl inserted through the locking rings so they show more clearly.

15 Open one large A ring for the center of this new segment. Fold the last two rings, one to each side, and prepare to insert this ring just like you did with the connector ring in step 12. It passes between the two outer rings, catching the sides of the folded rings below. The awl marks the path for this ring **n**.

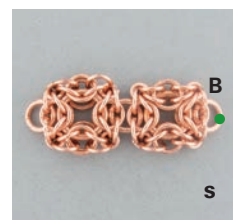
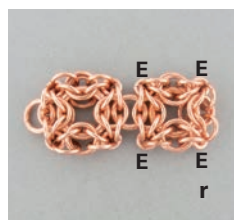
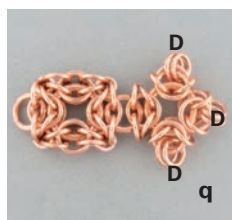
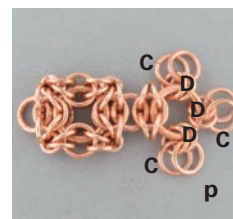
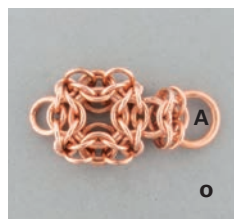
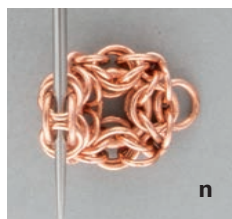
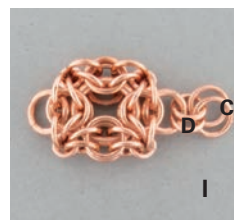
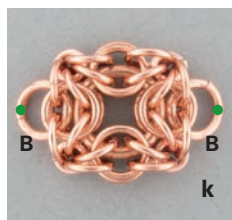
16 Insert the A ring and close it **o**.

17 Close six C rings. Open 12 smaller D rings. Use six open rings to attach three sets of ring pairs to the large center rings—just like steps 2 and 3 **p**.

18 Use the remaining six open D rings to fold and lock as you did in steps 4-8 **q**.

19 Open four E rings and create the corners, just as you did in step 10 and 11 **r**.

20 Open one B ring. This is the connector ring that completes this second square segment. Attach it as you did in step 12 **s**.



Celtic Star

The Celtic Star pattern is a variation of the Celtic Visions weave. The stars are circle shapes that are built from the center outwards.

1 Set out the three sizes of rings needed to make one star: 15 large (L), 21 medium (M), five small (S). Close 10 M rings and open one M ring.

2 Hold the open M ring in your pliers, go through 10 closed M rings, and close the ring. This is the center of the star **a**. Chainnose pliers may help in this tight space.

3 Open 15 L rings. Hold an open L ring in your pliers and go through two of the M rings from step 1. Close the ring **b** (red dot).

4 Take another open L ring and go through the next two M rings. Close the ring. Repeat around the center until you've used five L rings and all 10 M rings **c**.

5 Hold an open L ring in your pliers and go through two of the 10 center rings, but go through one from one pair and one from the next pair **d**. These L rings overlap two of the rings from step 4.

6 Repeat step 5 step for five L rings **e**.

7 Hold an open L ring in your pliers and go through two of the center rings, but go through one from one pair and one from the next pair. These L rings overlap two of the rings from the previous step. See the ring with the red dot **f**.

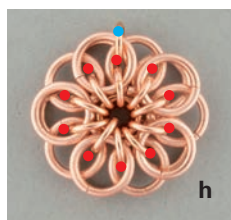
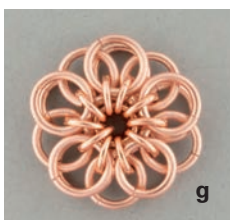
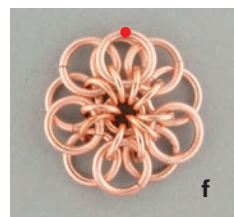
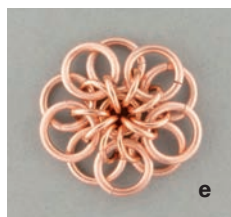
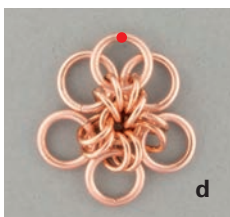
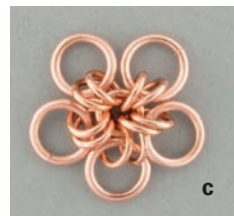
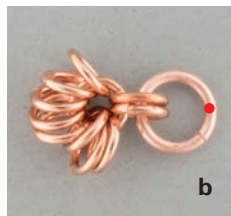
8 Repeat until you've used five L rings. Notice that the top and bottom pairs of outside rings sit on top of each other and capture the sides of two rings in the middle layer **g**.

9 Open 10 M rings. Notice again how each outside pair of large rings captures the sides of two middle layer rings. Where they overlap there are openings or "eyes". These eyes are marked with red dots. Hold an open ring in your pliers and go through one of these eyes. (You will be passing through three rings). Close the ring. It is marked with a blue dot **h**.

10 Repeat step 9 a using the remaining nine rings **i**.

11 Open five S rings. These will join the previous rings together in pairs. Look at a front and back pair of rings and the two rings on either side. Lean those two rings towards each other. Hold an open ring in your pliers and go through those two rings. See the ring with the red dot **j**.

12 Repeat this step around the star, adding the remaining four rings **k**.



The pattern

To review, here are the steps to make a star: Start with one M for center. Add 10 M to center. Add 15 L petals in three layers. Add 10 M into eye hole. Add five S to the star points.

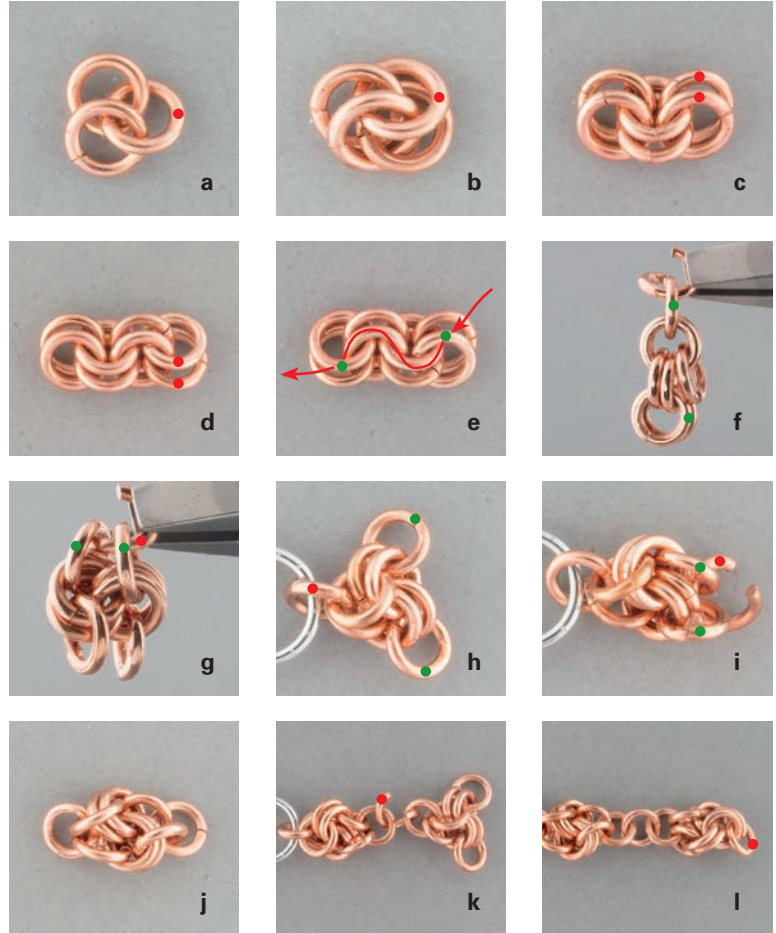
TIP

If you are having trouble getting all the rings on in step 2, first add as many as you can—then open the rest and add them on one by one after the center ring is closed.

Chinese Knot

The original name of this chain mail pattern is Pheasible, but to me, the weave looks like Chinese Knots, so that's what I've called it. It is composed of segments linked together with one jump ring. Each complete segment uses 10 rings. One more ring joins two segments together.

- 1** Open eight rings and close two. Hold an open ring with the pliers and add on the two closed rings. Close the ring **a** (red dot).
- 2** Pick up an open ring and put it through the same two closed rings—now you have a chain of two pairs of rings **b**. (red dot)
- 3** Add two rings (one by one) to the end pair of the chain for a chain of three pairs of rings **c** (red dots).
- 4** Add two more rings to the end pair of the chain for a chain of four pairs of rings **d** (red dots).
- 5** The red arrows show the easiest way to pick up the next two rings. You may find it helpful to lay the chain of linked rings on your index finger and hold it with your thumb as you use the pliers to pick up a ring from each end **e**.
- 6** Hold an open ring with the pliers and slip on one ring from one end pair **f**.
- 7** Add a second ring from the other end pair. See the rings with green dots **g**.
- 8** Connect this ring (red dot) to a paper clip or wire so that the next two rings you'll connect (green dots) can be easily identified **h**. (See tip.)
- 9** Hold an open ring with the pliers and slide on the two rings with green dots **i**. Close the ring.
- 10** Your completed segment will look like **j**.
- 11** Follow steps 1–7 to make the next segment.
- Before you set down your pliers, use a ring to connect that last ring to the end ring of the previous segment **k** (red dot).
- 12** Add the final ring to complete this second segment (red dot) (just like steps 8 and 9) **l**.



TIP

If you set your work down after step 7 without adding the final ring, here's how to find the last ring you added. Notice there are three rings sticking out to choose from. Two of them go through a parallel pair of rings. The third one goes through a pair of rings that are on an angle (because you picked them up from opposite ends of the beginning mini-chain). That's the one you will connect for the next segment in step 10.

Double Spiral

The Double Spiral chain mail weave has each pair of rings placed through the previous two pairs. It's a spiral chain that looks much like a rope—and is sometimes called Rope Chain.

1 Close two rings and open several more. Hold one open ring with the pliers, pick up the two closed rings **a**, and then close the ring.

2 Add a fourth ring along the same path **b**.

3 Attach a twist tie or piece of wire to a pair of rings so you have a “handle” to hold the chain **c**.

4 Hold the twist tie and the edges of rings 1 and 2. Push rings 3 and 4 upwards, and notice the hole where the two pairs overlap—marked with an X **d**.

5 Insert ring 5 into that hole **e**. Open the rings wide enough to maneuver them into place easily.

6 Close the ring. Let it flop downwards so it's out of the way **f**.

7 Insert ring 6 into the same hole just above ring 5 **g**. Close the ring. Be careful not to go through ring 5.

8 Notice that rings 5 and 6 go through the previous two pairs of rings **h**.

9 Push rings 5 and 6 upwards against rings 3 and 4. Insert ring 7 into this opening and close the ring. Notice the hole marked with an X **i**.

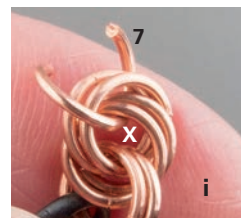
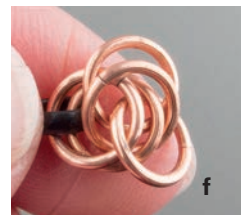
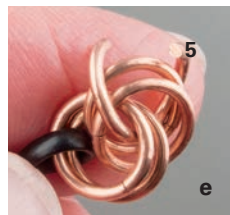
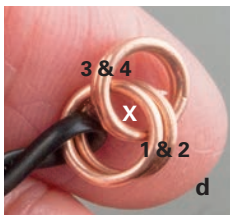
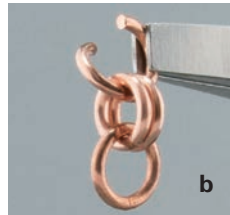
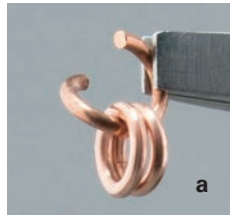
10 Insert ring 8 in the same hole, just above ring 7 **j**.

11 This photo **k** shows the first four pairs of rings. You can see the spiral pattern developing.

12 Photo **l** shows the first six pairs of rings. Rotate the chain to observe the spiral pattern and to check for errors.

Pattern repeat

Continue to repeat steps 9 and 10, always adding two rings through the previous two pairs.



TIP

To keep the spiral pattern consistent, always push the most recent pair upward to expose the hole for the next two jump rings. The word “upward” makes sense if the twist tie is in your left hand and the chain is horizontal.

European 4-in-1 (or Flat Mesh)

Flat Mesh or European 4-in-1 weave was used to make armor and jewelry in Europe many years ago. This chain mail weave has four rings linked to each ring, and allows you to build shapes by increasing and decreasing at the edges. It drapes and curves like a flexible fabric. There are different strategies for creating this weave—I have chosen what I think is the easiest one to understand, though it is not necessarily the speediest.



Basic European 4-in-1 unit

The starting row determines the width of a rectangular piece of flat mesh—or the widest row of a triangle or diamond shape. The starting row for a rectangle begins and ends with a pair of rings, and each pair is linked to a single ring.

You can change the length of the starting row to create a wider or narrower piece of mesh.

- See step 20 to learn how to add beads to the edges.
- See step 21 to learn how to create a diamond or triangle shape.
- See step 25 to learn how to join two pieces with an angled seam.
- See steps 31 and 38 to learn how to make doubled-up or kinged versions of this weave.

1 Close 10 rings. Open four rings.

2 Hold an open ring with your pliers and pick up four closed rings **a**.

3 Close that ring. Arrange your work like the basic 4-in-1 unit **b**. Observe there are three columns: Column 1 has two rings tilted away from you, and the front one sits on top of the back one. Column 2 has one ring tilted forward. Column 3 is the same as column 1.

4 Photo **c** shows the rings we'll use for the next step.

5 Hold the open ring with your pliers, pick up two closed rings at the end of the chain, and add two closed rings **d**.

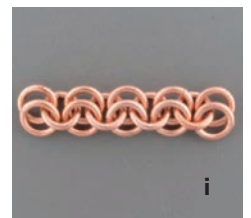
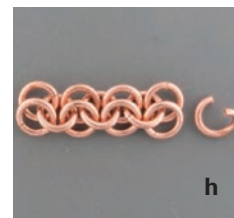
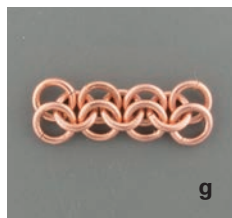
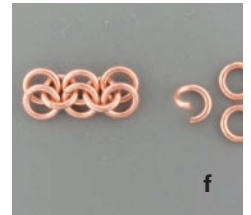
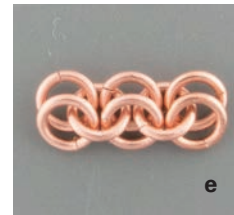
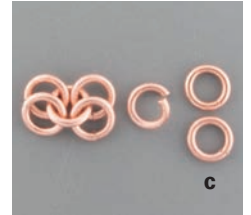
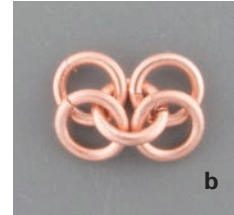
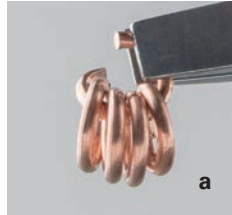
6 Close the ring. Arrange your work to look like **e**.

7 Photo **f** shows the three rings we'll use for the next step.

8 Hold the open ring with your pliers, pick up two closed rings at the end of your chain, add two closed rings, and then close that ring. Arrange your work to look like **g**.

9 Photo **h** shows the three rings we'll use for the next step.

10 Hold the open ring with your pliers, pick up two closed rings at the end of your chain, add two closed rings, and then close that ring. Arrange your work to look like **i**.



TIP

At this stage it may take some playing with the rings to lay them out neatly. Try rolling them around between your thumb and index finger until they lay flat. Then set them down on your work surface and rotate them as needed. You have completed the foundation rows and set the width of the bracelet.

Stabilize the work

11 Carefully set the foundation rows onto the sticky side of a piece of low-tack painters tape **j**.

12 Use strips of tape to completely cover up and secure the bottom five rings marked with green dots (previous photo). Take your time—you don't want them to be easily pulled loose. The five rings with red dots are the ones we'll build on **k**.

Rectangle pattern

13 Row 1: Open four rings. Notice the five bottom rings with numbers 1–5. They are tilted away from you. You are going to link them together. Insert a ring down through ring one and around and up through ring 2. Now close it **l**.

14 Join rings 2 and 3, 3 and 4, and 4 and 5 the same way **m**.

15 Row 2: Open five rings. Use three of the rings to link together the four rings from Row 1. Photo **n** shows the first ring in place.

16 Photo **o** shows three rings in place.

17 Hold an open ring in your pliers and insert it through the first ring of the previous row. Close the ring. Add the last ring to the other end of the row (see the rings with red dots). Notice that an end ring only goes through one ring—it hangs loose, but it will get connected in the next row. Row 2 is now complete **p**.

18 Repeat Row 1 (see red dots) **q**.

19 Repeat Row 2 (see red dots). Continue to repeat these two rows for the length of your rectangle **r**.

Add beads to the edges

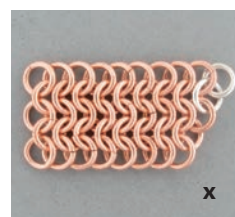
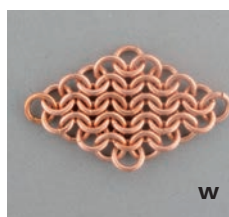
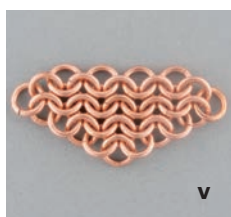
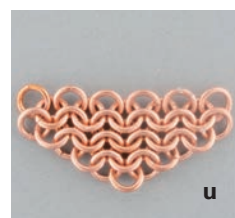
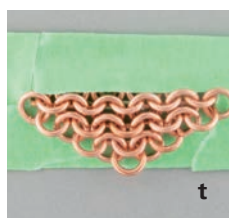
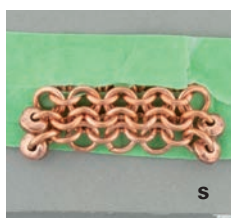
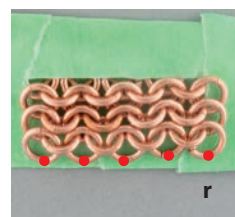
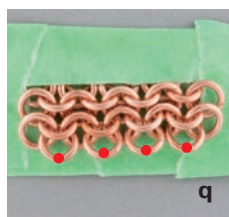
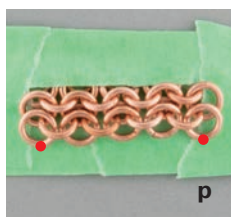
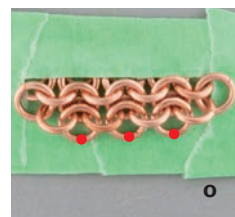
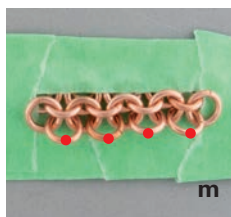
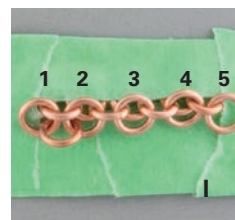
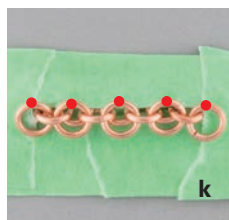
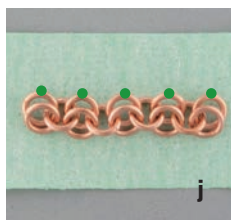
20 The easiest method to add beads along the edges is to add them as you weave (rather than afterwards). The edge rings are in Row 2. Don't add beads to the foundation row: step 17 is where you would add the first set of beads. You can add beads to the edges of the foundation row after you remove the tape **s**.

Diamond pattern

21 Close 12 rings and open 5 rings to make a foundation row with 6 pairs of rings. Stabilize it with tape as in step 11. The next has 5 rings, but the following have 4, then 3, then 2, then 1 ring **t**. Do not add any "loose" rings to the outside edges.

22 Remove the tape. Notice the pair of rings in each top corner that were covered by the tape **u**.

23 Remove one ring from each of the top corners. Notice that the top edge, the new working edge row, has four rings **v**. Turn your work around.



24 Add rings to the new working edge. Add 3, 2, and 1 ring to complete the diamond shape **w**. (Turn it 90 degrees and you *could* add an earring finding to the top point, and a dangling bead to the bottom.)

Join with an angled seam

25 Prepare two rectangular strips of European 4-in-1 to join on an angle. Lay out one strip so the rings in the bottom row lean to the right. Remove the bottom ring at the right. Add a ring to join the two rings remaining in this row of three rings. Add the top, edge ring of the next row. See the two silver rings that have been added **x**.

26 Repeat step 25 with the second strip of chain. (Remove one ring and add two rings.) Notice the top and bottom edge rings all lean to the right **y**.

27 Use four rings to close this seam. Each ring inserted must match the "lean" of its row. The first ring connects the second rows up from the bottom. It connects one ring from each side and maintain that row's lean to the left and the bottom row's lean to the right. Insert the ring up through the ring on the left, and up through the ring on the right **z**.

28 The second ring connects the third rows up from the bottom. It connects one ring from each side and maintains that row's lean to the right and the previous row's lean to the left. Insert the ring up the ring on the right, up the new ring of the previous row, and then down the ring on the left **aa**.

29 The third ring connects the fourth rows up from the bottom. It connects one ring from each side and maintains that row's lean to the left and the previous row's lean to the right. Insert the ring up the ring on the right, down the new ring of the previous row, and then up the ring on the left **bb**.

30 The fourth ring connects the fifth rows up from the bottom. It connects one ring from each side and maintains that row's lean to the right and the previous row's lean to the left. Insert the ring up the ring on the right, up the new ring of the previous row, and then down the ring on the left **cc**.

Doubled-up (kinged) European 4-in-1 diamond

31 Make a foundation row of two rings connected to two rings, and repeat until you have nine pairs of rings. (You must have an odd number of pairs.) Stabilize it by taping the bottom ring of alternate pairs. Be sure that the first and last pair are taped, and that the interlocking pairs are standing upright **dd**. Take your time to really secure the rings.

32 Add another ring on top of the five single rings **ee**.

33 The next has four pairs of rings **ff**.

34 Then add three pairs, then two pairs, and the last row has one pair of jump rings **gg**.

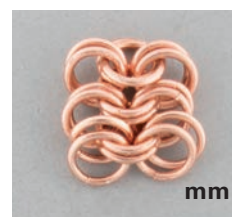
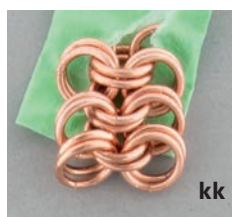
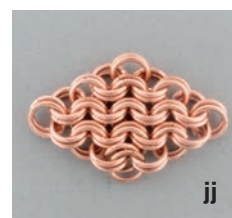
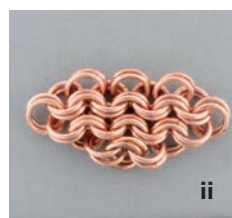
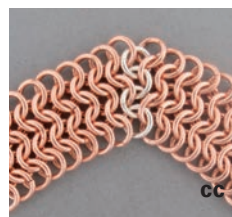
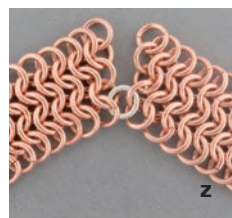
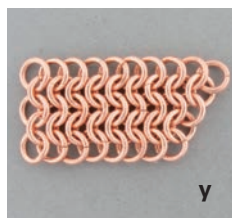
35 This is what you have when you remove the tape **hh**.

36 Remove the single ring at the top corners, and then double up the remaining three rings **ii**.

37 Add two pairs, and then one pair to finish the diamond shape **jj**.

Doubled-up (kinged) European 4-in-1 rectangle

38 The doubled up European 4-in-1 can also be a rectangle. Here we start with only three pairs of rings and tape down the bottom ring of the outside pairs. Next we double up the single rings from



those pairs, and then proceed with the weave. Here, we've added a row with one pair, a row with two pairs, a row with one pair, and a final row with two pairs **kk**.

39 Remove the tape. Note the single rings that were under the tape **ll**.

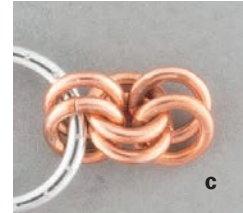
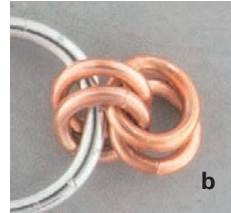
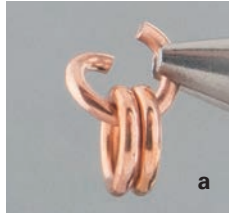
40 Remove those two single rings **mm**.

4-in-2

The 4-in-2 weave has a pair of rings placed through each previous pair. If you look in the middle of the chain you will notice that every pair has four rings linked to it, hence the name.

Getting started

- 1 Close two rings and open additional rings, setting them out in pairs.
- 2 Hold an open ring in your pliers and pick up the two closed rings **a**. Close the ring.
- 3 Add a second ring through the same path. Add a piece of scrap wire or a paperclip to the pair of rings to give you a handle **b**.

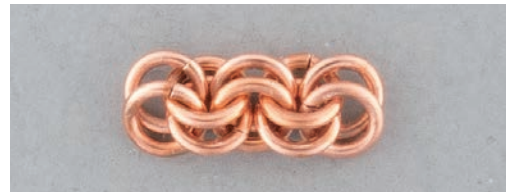


Pattern repeat

- 4 Add two rings (one by one) to the end pair of rings **c**. Repeat this step until your chain is the desired length.

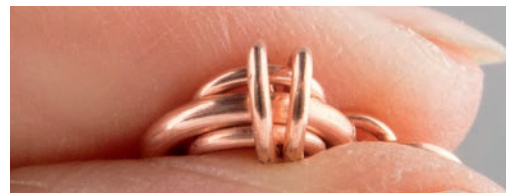
TIP

Here's a shortcut. In step 1, open half the rings and close half the rings. In step 4, instead of adding all the rings one by one, you can start each new pair by adding two closed rings as you did in step 2. Then finish the two new pairs with step 3.



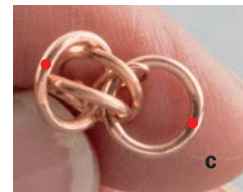
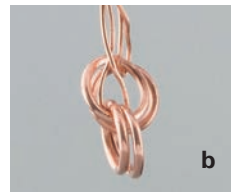
Foxtail

The Foxtail weave is a round chain with a repeating pattern of four rings. This pattern is more accurately called Full Persian 6-in-1.



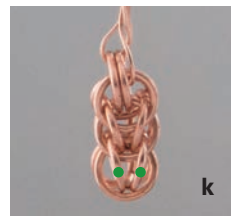
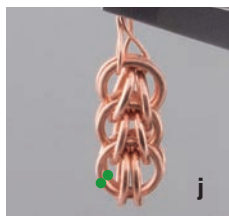
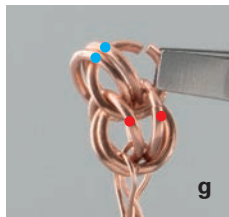
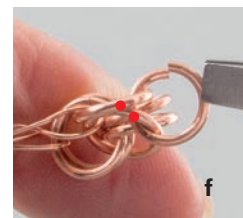
Getting started

- 1 Close two rings and open six rings. Insert an open ring through the two closed rings; close the ring. Repeat with the second ring. You have two pairs of linked rings. Add a short piece of wire to each pair to act as handles **a**.
- 2 Hold the two wire handles together and arrange the rings as in **b**.



Pattern

- 3 Open four rings. Spread apart the end pair of rings to reveal an inner pair of rings **c** (red dots).
- 4 Use pliers to add a ring through the inner pair of rings (red dots) **d**. Close the ring.
- 5 Add another open ring through the same two rings and close it **e**. Observe the rings you spread apart (red dots) form a V shape, with the point of the V pointing to the beginning of the chain. Now rotate the chain, and you will see the same V shape appears on the other side of the chain.
- 6 Hold an open ring and go through the sides of the two rings that make the V (red dots) **f**.
- 7 Carefully curl the end of the ring around and go through the last pair of rings added (blue dots) **g**.
- 8 Rotate the chain to the other side and add a second ring on that side (just like you did in steps 6 and 7). You can see the first two pattern repeats **h**.
- 9 Repeat steps 3–8 for the required length. Here are the first two rings of the next segment **i**.
- 10 Photo **j** shows the third completed segment. The last two rings added have green dots.
- 11 Photo **k** shows the side view. The last two rings added have green dots.



TIP

Each repeat uses four open rings so open a stash of rings, and set them out in rows of four.

Japanese 12-in-2

The Japanese 12-in-2 weave is composed of pairs of small rings that sit upright and large rings that lay flat. The center of each “flower” is a large ring pair surrounded by six “petals.” Wherever the large rings touch each other, pairs of small rings connect them. The strategy for each segment is to complete the center circle of rings, add the top layer of large surrounding rings, make the connections, and LAST of all, add the second layer of large rings.

Japanese Flower segment

1 Open two large rings (not too wide). Close 12 small rings. Hold an open ring in your pliers, pick up the 12 small closed rings **a**, and close the ring. There’s not a lot of room for the pliers, so chainnose pliers, or the tips of bentnose pliers are helpful.

2 Hold the second large ring in your pliers and feed it through all 12 small rings. It will sit as a second layer on top of the first large ring. Be careful not to cross the other large ring **b**. Close the ring. This is the center of the flower.

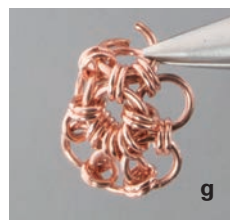
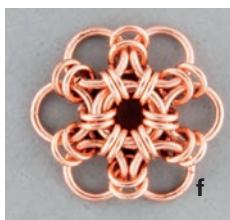
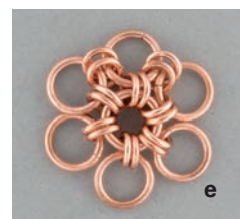
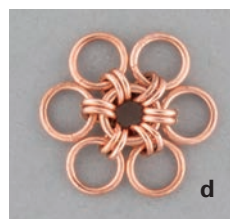
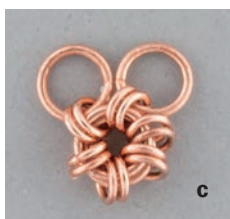
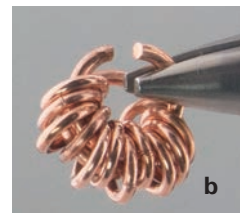
3 Open six large rings. Insert a large ring through two small ones in the flower center. Insert another large ring through the next two small rings **c**.

4 Repeat until there are six large rings surrounding the center ring and all 12 small rings are in place **d**.

5 Open 12 small rings. Link each pair of large ring petals with two small rings **e**. Photo **f** shows all 12 small rings in place.

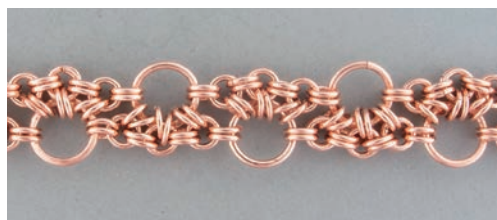
6 Open six large rings (not too wide). Insert one large ring on top of each large ring around the center of the flower. Maneuver each ring carefully so that you pass through all six small rings **g**. Be careful not to cross the two large rings. The introduction photo shows all six pairs of large rings in place.

7 Repeat steps 1–6 to make additional Japanese Flower components.



Japanese Stepping Stones

Japanese weaves are characterized by the use of horizontal rings linked by smaller vertical connector rings. In this variation you can see a winding path of small connector rings that outline the larger stepping stones.



Make mini chains

1 Open 12 small rings and close two small rings. Refer to the Chinese Knot weave and follow steps 1–4 to connect four pairs of rings. Continue adding rings one at a time, until you have seven linked pairs of rings.

2 Arrange your work into seven linked pairs **a**.

3 Open six small rings. Add two rings along one side to the second, fourth, and sixth link in the chain **b**.

4 Make several components.

Build the chain

5 Take two components and set them end to end, so that one has the three side-pairs pointing upwards and the other has the three side-pairs pointing down **c**.

6 Open several large rings. With your pliers holding an open large ring, hold a mini-chain and pick up the three side-pairs of that component. Then add the two end rings of the next mini-chain. This mini-chain must be turned in the opposite direction to the first one **d**. Now close the large ring (red dot).

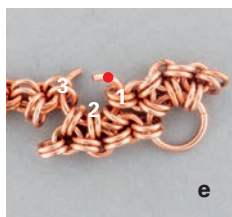
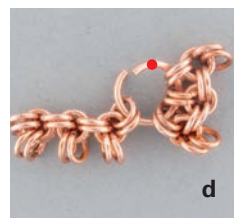
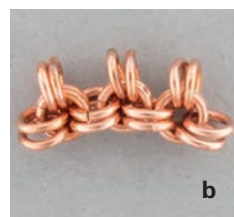
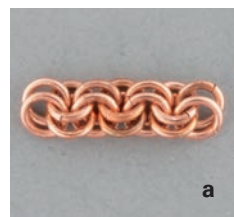
7 With your pliers holding another large ring, pick up:

- The end pair of rings from the previous component,
- The three side-pairs of the current component, and
- The end pair of rings of the next component.

Make sure this new component is turned in the opposite direction to the previous one **e**. Close the large ring.

8 Repeat step 7 to lengthen the chain.

The final step is to double up every large ring in the chain. The new rings will pass through all the same small rings **f**.



A Faster Way to Make Mini Chains

1 Open six small rings and close eight small rings

2 With your pliers holding an open ring, add four closed rings. Close that ring.

3 Pick up another open ring and go through the same four closed rings. Close that ring.

4 Lay your work down and arrange it into three pairs.

5 With your pliers holding an open ring, add two end rings of the chain you are making, and then add two closed rings. Close that ring.

6 Pick up another open ring and go through the same four closed rings. Close that ring. Lay your work down and arrange it into five pairs.

7 Repeat the previous two steps and you will have seven pairs.

Jens Pind Linkage

Jens Pind Linkage is a member of the spiral family (a spiral 4-in-1 chain). The rings are sized snugly so that the spiral won't unwind. The correct ring sizes are crucial for success. I start this weave with nine rings: three copper (CU), three bronze (BR), and three black (BL). They are the same size as the rings you will be using for the rest of the chain. These rings are used at the beginning of the chain and then removed later. Their purpose is to make starting the chain easier. I've started the chain with copper because that is what I've used for the rest of the chain.

Three sets of three rings

First three rings

1 Close one copper ring and open the rest. Pick up an open BL ring, add the closed CU ring, and close the ring. Add a twist tie or a paper clip to the CU ring as a handle **a**.

2 Holding the handle, orient the first ring vertically, tip the front of ring two upwards in front of ring 1. Insert a BR ring through the center of the first two rings. Close that ring **b**.

First pattern repeat

3 Tip the previous two rings upward and insert a CU ring through those two rings. Notice that the two CU rings (ring 1 and ring 4) are both in the same plane **c**.

4 Tip the previous two rings upwards and insert a BL ring through those two rings. This is the most important ring! Notice that it will sit above the previous BL ring, and that the second CU ring moves in front of the first CU ring **d**.

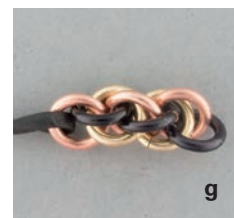
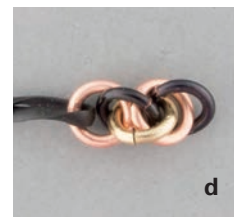
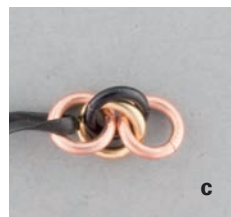
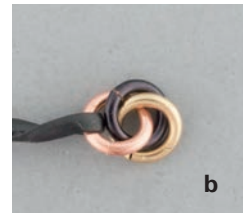
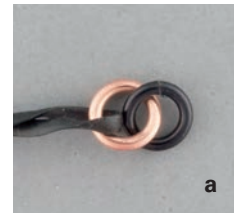
5 Tip the previous two rings upwards and insert a BR ring through those two rings. It will sit below the previous BR ring **e**.

Second pattern repeat

6 Tip the previous two rings upward and insert a CU ring through those two rings. Before you close the ring, check its orientation to make sure that the 'steps' continue correctly. Look at the last unconnected ring (the third ring from the end). Notice that this ring will again sit below the previous CU ring **f**.

7 Tip the previous two rings upwards and insert a BL ring through those two rings. Before you close the ring, check its orientation to make sure that the steps continue correctly. Look at the last unconnected ring (the third ring from the end). Notice that this ring will again sit below the previous BL ring **g**.

8 Tip the previous two rings upwards and insert a



BR ring through those two rings. Before you close the ring, check its orientation to make sure that the steps continue correctly. Look at the last unconnected ring, i.e. the 3rd ring from the end. Notice that this ring will again sit below the previous BR ring **h**.

How to check your work

9 These nine rings set the pattern for this weave. Hold the chain with the starting rings in your left hand and the first CU ring upright. Turn the chain a bit towards you so you can see that the row of CU rings form 'stairs' heading upwards—just like photo **b**. Observe that with the first CU ring upright, the steps on one side of the chain are oriented differently than the other side of the chain—so match the photo before checking the other ring colors. (Viewpoint is important.) Now turn the chain slightly towards you and look at the BR rings. They also form steps heading upwards. Now turn the chain slightly towards you again and look at the BL rings. They also form steps heading upwards.

Complete the chain

10 Now we start to use all copper rings, the main color of the chain. Repeat and maintain the same pattern of steps, and check EACH ring before and after you close it! Photos **i–l** show the next three copper rings.

11 Continue to add rings until your chain is the desired length. Remove the starter rings and keep them in a safe place so you can use them again when you make your next bracelet or necklace.



Möbius Ball

This Möbius ball (or flower) is made of six large rings. Small rings are used to lock in the shape of the ball. Each ring added to the ball passes through all of the previous rings. The result is a beautiful nesting set.

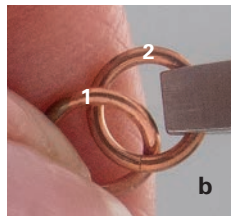


Möbius Ball segment

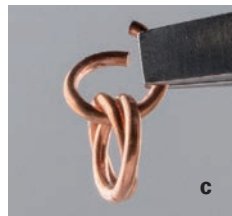
1 Close one large ring and open five large rings. Open four small rings. Insert an open large ring through the closed large ring **a** and close it.



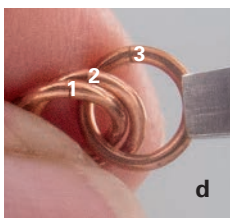
2 Use the fingers of your non-dominant hand to turn the dangling ring to the left. Use the pliers, still holding the newly closed ring, to slide it sideways, behind the previous ring **b**. Keep holding the rings.



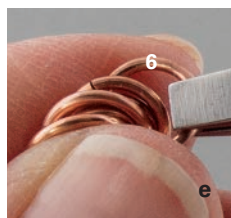
3 Insert a large ring (front to back) through the center of the previous rings **c**.



4 Close it. Turn the dangling rings to the left and then slide the new ring sideways so the top of the new ring lies behind the previous ring **d**. Keep holding the rings.



5 Repeat steps 3 and 4 until you have all six rings nested together **e**. Don't change the order of the rings. Keep holding until you add a locking ring.



6 Pick up a small ring, insert it through the center of the Möbius ball **f** and close it. This locks the Möbius rings in place.



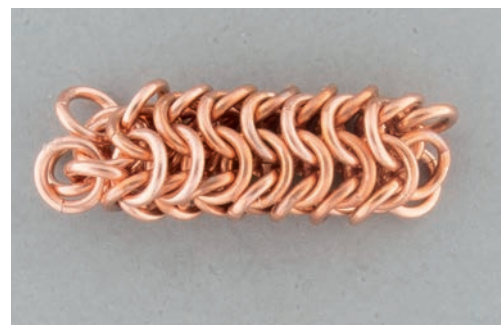
TIP

If you drop a Möbius ball while you are making it, it is difficult to return the rings to their original order. It's easier to just take it apart and start over.

7 Add three more small rings through the Möbius.

Roundmaille

The Roundmaille weave is considered to be a three dimensional extension of the Boxchain weave. (There is also an extension of the Byzantine weave called Turkish Roundmaille.) This chain is very dense and holds its round shape. It is well suited for bracelets and necklaces. There are several different strategies for starting this weave, but this method makes it quite easy.

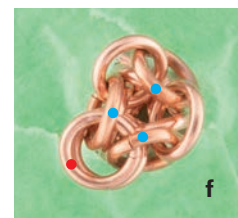
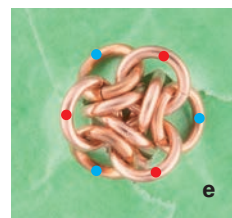
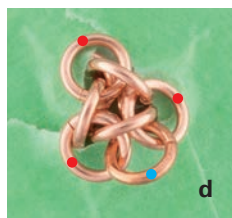
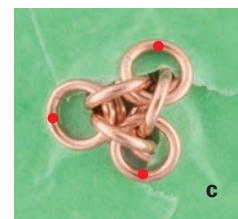
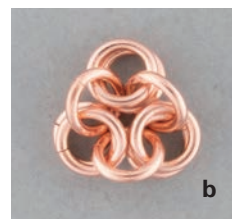
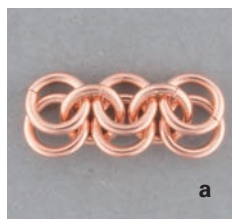


Getting started

1 Open three rings and close six rings. Follow steps 1–6 of the European 4-in-1 weave to make this 4-in-1 mini chain **a**.

2 Connect the ends of the mini-chain to make a circle: Hold the final open ring in your pliers; add the two rings from one end and the two rings from the other end. Close the ring **b**.

3 Cut a 1-in. piece of painters tape and set down your circle of rings so the pairs are stacked one on top of the other. Take three small pieces of tape and securely cover the bottom ring of each of the three pairs. The top ring of each pair has a red dot **c**. These are the rings that will be connected together in the next step.



The pattern

Open a stash of rings and set them out in rows of six.

Cup

4 Cup the flat rings upward and work from the outside of the tube to connect them together. Hold an open ring in your pliers and connect two of the rings with red dots from the previous round. The ring with the blue dot was just added **d**.

TIP

To help you “cup the rings” turn your work upside down, and the last three rings will dangle down—ready to be cupped together.

5 Repeat twice to connect all three rings with red dots. These three new rings will fold down nicely at the sides **e**.

Fold

6 The previous three rings (blue) have folded down by themselves. Work in the center of the tube to connect the tops of these rings (they’re poking up

in the center). Hold an open ring in your pliers and connect two of the rings with blue dots. The ring with the red dot was just added **f**. Squeeze the sides of the tube as you prepare to insert this ring. An awl or a piece of wire can help to position the two rings.

7 Repeat twice to connect all three rings in a circle. See the rings with red dots **g**. These three rings will not fold down at the sides. If you use your thumbs and index fingers to push them upwards (cupping them together) it is clear how to add the next round of rings.

8 Repeat steps 4–7 until your chain is the desired length.

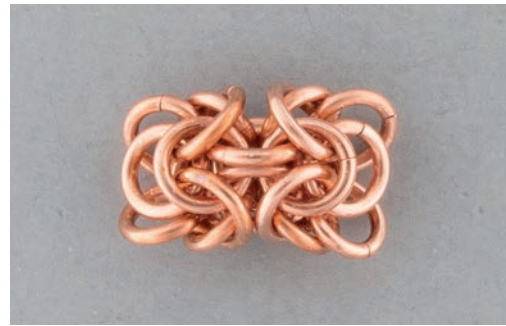
TIP

Every little while, look at the pattern on the sides of the chain to be sure that you’ve remembered to alternate three rings on the outside and then three rings on the inside of the tube. If you inserted all the rings from the outside, you’d be making Inverted Roundmaille weave!



Turkish Roundmaille

The Turkish Roundmaille weave, part of the European family of chain mail, is an intricate looking, round weave, that is a three dimensional extension of the Byzantine weave. A complete segment uses 21 jump rings. The next segment, linked to this one, will have only 18 rings because the last three rings of segment one are shared as the starting three rings of segment two. A half-segment has nine rings.



Getting started

1 Open three rings and close six rings. Follow steps 2–6 of European 4-in-1 weave to make this 4-in-1 mini chain **a**.

2 Follow steps 2 and 3 of Roundmaille weave to prepare a starter piece **b**.

Beginning the chain

3 Open six rings. Finish preparing the beginning of this chain by following steps 4–7 of Roundmaille weave **c**. You've used 15 rings so far. The first three are starter rings that are not part of any segment. The last 12 rings complete a half-segment. From here forward, each half-segment uses nine rings. See **g** for the numbers.

The half-segment repeat

4 Open nine rings and lay them out in three rows of three rings. It's very helpful to do this to keep track of where you are in the pattern.

Cup

5 Cup the last three rings (red dots) upwards between your thumb and index finger. Working on the outside of the chain, join 1 and 2, 2 and 3, and 3 and 1. These new rings have blue dots **d**.

Cup

6 Cup the last three rings upwards between your thumb and index finger. Working from the outside of the chain, join 1 and 2, 2 and 3, and 3 and 1. The new rings have green dots. They fold down to the sides and the tops of the rings peek up in the center **e**.

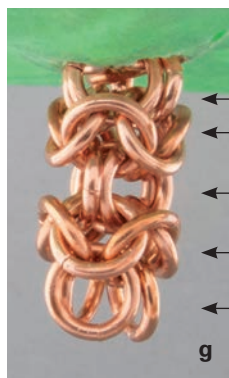
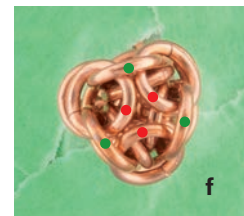
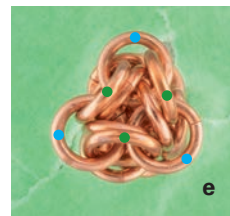
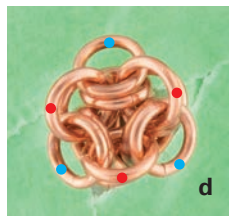
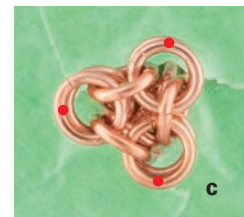
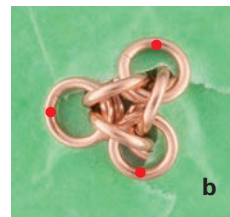
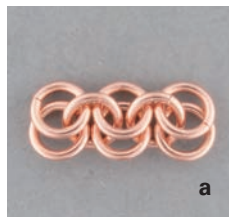
Lock the fold

7 Hold the chain between your fingers, with the newest rings (green dots) folded to the sides. Working in the center of the chain, use three rings to join the tops of the rings that peek up in the center (green dots). The new rings have red dots **f**.

This is a side view of the chain so far **g**. This is one complete segment. (The three rings under the tape are not part of the segment.)

8 Repeat steps 4–7 for the length of your chain. Your mantra is "Cup, Cup, Lock the fold"

Remove the tape and the initial three rings.



3 end rings
6 rings folded
3 center rings
6 rings folded
3 end rings

TECHNIQUES

These step-by-step instructions are for the techniques I use to add beads to chain mail projects. They explain some of the thinking and decision-making involved in jewelry design.

Adding a Pendant

How is the pendant configured? Does it have a bail or a built-in way to add it with a jump ring? Does it have a hole? Or is it a cabochon or found object with neither bail nor hole?

If there's a bail:

- Do you like it? Keep it!
- If not, you can remove it and add something better, such as a glue-on metal bail.
- What if the loop or hole is too big and the pendant would flop if you just used a jump ring? Perhaps you can fill the opening using seed beads on a length of wire with loops at the ends.

If there's only a hole:

- If the hole is vertical, then a headpin might work. It will depend on how long the path is and whether you have a headpin that is long enough. If not, then a length of wire with loops at each end will work. You may want to use wire anyway if you want to add some beads to dangle below the pendant.
- If the hole is horizontal, like a top drilled briolette, then a jump ring might fit. If not, then it means using a length of wire. Add a loop on both ends of the wire and then use jump rings to connect it to chains. If you want it to dangle below the chain, then you can make a wrapped loop above the briolette or use cones for a sleeker finish.
- If the hole is horizontal, but front to back, then perhaps a jump ring will work. But, there are other creative options. You can use a length of fine commercial chain, loop it through the hole, and connect it with jump rings.

If there's no hole or bail:

- Glue it to a connector plate.
- Glue it into a frame.

Adding Beads

What kind of loop should I make?

Simple loops will work fine, but there are some things to consider:

- Will the connection be stressed or likely to be pulled, such as on a bracelet, or will it just dangle, as with earrings?
- Is the gauge of the wire very fine so the resulting loop could be easily pulled apart? Is the wire “hard” rather than “soft” in temper?

Double loops are not hard to make and are quite secure.

Wrapped loops are the most secure, but they take more practice to perfect—my goal is even, snug wraps.

Another consideration is the amount of space used by the loops. Sometimes you may want the beads to sit close to the connecting chain, and other times the space is fine—it's a design decision.

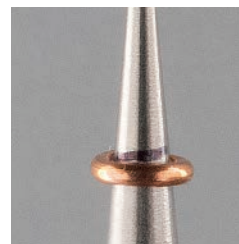
When should I use flexible beading wire?

If you want to add several beads beside each other, then you can make a bead link using rigid wire and loops on either end, or you can use flexible beading wire.

If using rigid wire, 3 in. is about the maximum practical length. If more than that, use the flexible beading wire and finish it with wire protectors, crimps, and crimp covers.

TIP

Place a jump ring equal in size to the loop you desire to make on the roundnose pliers and make a mark just above it with a permanent fine-tip marker. This marks a spot that makes a loop the size you want. You can wipe off the mark with rubbing alcohol and make a new mark for a larger or smaller loop size. Practice with craft wire until you are happy with your loops.



Make a wrapped loop and a spiral

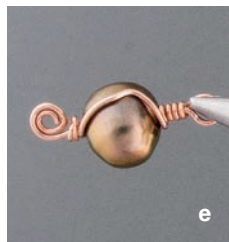
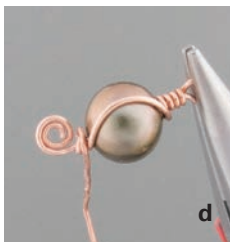
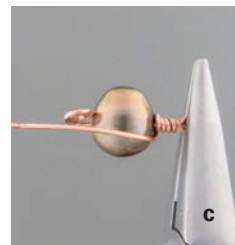
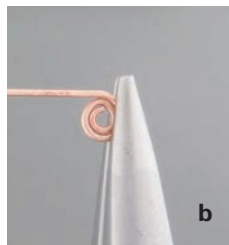
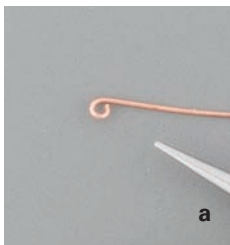
1 Cut a piece of wire for every bead you plan to wrap. Flush cut the ends. The wire for this 7mm bead was 3½ in. Start with the spiral. Use the tip of roundnose pliers to make a tiny loop at one end of the wire **a**.

2 Hold the loop with chainnose pliers, and use your other hand to hold the wire. Use your thumb to press the wire tight around the loop as you wind a spiral in small steps. Wind a bit, then reposition the wire, and wind a bit more. Keep a tight spiral shape. Repeat until you have two complete rotations **b**. You may wish to hammer the spiral to flatten and harden it.

3 String a bead and then make a wrapped loop with three to four wraps. The last wrap should be around the top of the bead **c**.

4 Pull the end of the wire across the bead and down towards the spiral **d**. Wrap the wire twice around the base of the spiral. Clip the wire snugly and tuck-in any protruding end with chainnose pliers.

5 With the tip of the chainnose pliers, grab the wire in the middle of the pearl, and gently rotate the tip of the pliers to create a wave embellishment that also tightens up the wire **e**.



Make double loops

TIP

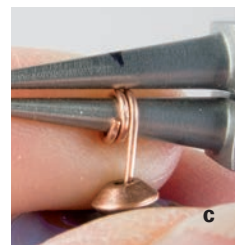
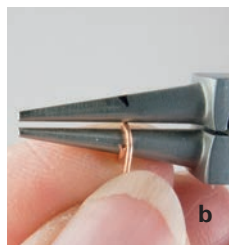
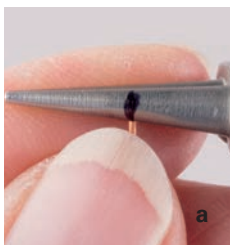
Use craft wire to make your first double loop. Then unwind the loops and straighten them so you can measure to see how much wire you will need to make a loop of the size you want. In this example I used a 2-in., 22-gauge copper headpin to wrap three beads.

1 Hold the wire vertically in your non-dominant hand and hold the pliers horizontally in your dominant hand. Place the top of the wire between the jaws of the pliers, right at the mark, so that the tip of the wire is almost hidden and you can't feel the top of it with your fingertip **a**.

2 Use the thumb and fingers of the hand that is managing the wire to keep the wire pressed against the bottom jaw of the pliers as you rotate the pliers away from you **b**.

3 Your wrist will only rotate so far, so release the tension on the pliers while you rotate the pliers back to the starting position. Then tighten the pliers on the wire and rotate them away from you again. Keep repeating this process while the wire wraps around the bottom jaw of the pliers **c**. Continue to press against the wire as you work in order to get a nice, snug, round loop.

4 After the first complete loop, guide the wire so it sits beside the previous loop (like a coil) and continue looping the wire until you have two complete loops **d**. Notice that here I have three loops—but I only want two. I very carefully cut off the extra loop with flush cutters **e**.



5 The final step is to make a centered loop. Grab the loop with your round or chainnose pliers—right next to the stem of the main wire. Flick your wrist quickly away from you. This movement creates a bend in the wire stem—and the loop will look like a lollipop **f**.

Add crimps, wire guardians, and crimp covers

This technique is used to add beaded sections in the Bold Beauty and the Foxy Heart Necklaces. The European Glitter Necklace uses this technique for a different purpose—go take a look! With a piece of flexible beading wire, you'll add some beads and finish both ends with a loop so it can be connected to chains or a clasp.

How to crimp

1 You'll need a tube crimp, a wire protector/wire guardian, and a crimp cover **a**. The flexible beading wire I mainly use is .014/.015 in. (but heavier .019 in. for heavy beads). I prefer 49 strand braided stainless steel wire with a plastic coating because it drapes well and resists kinking. These sizes work with 2x2mm tube crimps. The wire protectors and the crimp covers come in sizes that fit your choice of beading wire and size of crimps.

2 You'll also need crimping pliers **b**.

3 This is how you hold the pliers—notice that there is a front and a back to the pliers **c**.

4 This is a close-up of the two openings in the pliers **d**.

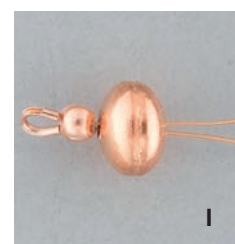
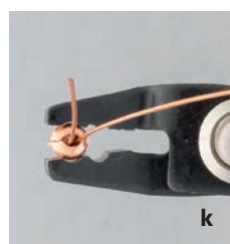
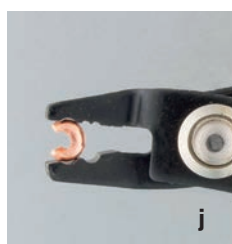
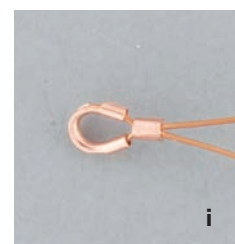
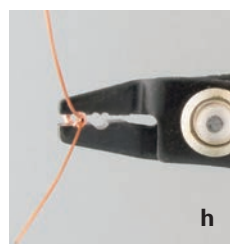
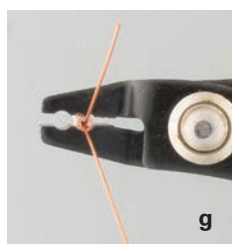
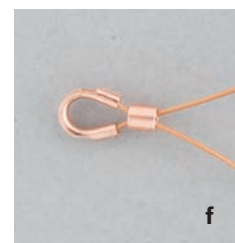
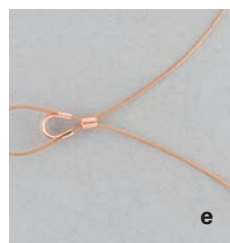
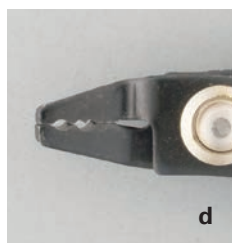
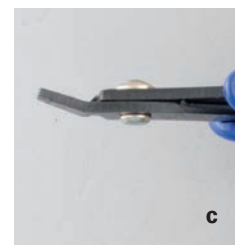
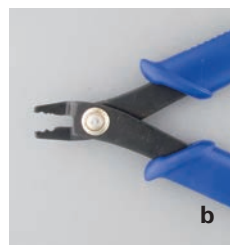
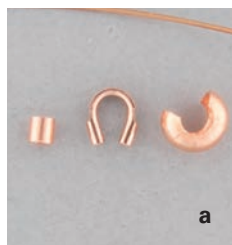
5 At one end of the wire, string a crimp bead. Pass the wire up one side of the wire protector, around the curve, and back down the tube on the other side. Then string the wire back through the crimp bead. Leave an inch or so of a tail **e**.

6 Tighten up everything, and it should look like **f**. You are ready to crimp.

7 Place the crimp in Opening 1 of the crimping pliers. Move the crimp snugly against the wire protector. With one hand, hold the two beading wires flat and separated. With your other hand, firmly squeeze the crimp. Do not use excessive force, but use the kind of pressure you'd use for a firm handshake **g**.

8 Rotate the flattened crimp and place it in Opening 2 in an upright position. Take your time to get it set properly. Squeeze the crimp again. You will feel the two sides fold together, rounding the crimp **h**.

9 The rounded crimp **i** is now ready for a crimp cover.



10 Arrange the crimp cover in the top of the pliers and gently hold it in position, ready to place in the crimp **j**.

11 Turn the crimping pliers so they point to the ceiling. Pick up the beading wire and set the crimp into the crimp cover. Gently and slowly close the crimp cover until it takes the shape of a round bead **k**.

12 This photo shows the wire protector, the crimp cover hiding the crimp, and the first bead that has been added **l**. Notice that the wire tail also passes through the hole of the bead.

How to add clasps to chain mail

On choosing a clasp

How many strands or end rings does the necklace have and how will it feel on the back of your neck?

Toggle Clasp

Attach the ring

Observe the orientation of the loop on the ring part of the clasp and the orientation of the end ring of your chain. You want the ring to lay in the same plane as your chain, not at right angles to it **a**. You will need either one or two jump rings to accomplish this. Use one or two small rings to connect the end segment of your chain to the ring part of the clasp.

Attach the bar

The clasp bar needs to fold sideways so it can be inserted through the toggle ring. To do that, put a small jump ring through the end ring(s) of the necklace. Continue linking small rings, one into the next. Attach the last one to the loop on the toggle. Use sufficient rings to match the length of the bar when it is folded sideways **b**.

Lobster

Lobster clasps come in many sizes, shapes, and metal choices. The claw part of the lobster needs to latch onto a ring at the other end of the chain **c**. They may or may not come with a jump ring for the other end of the chain. You may have to supply your own. A ring that is soldered closed is preferred. Some lobster clasps come with an extender chain. An extender is a length of chain links to which you can attach the claw of the lobster **d**. The advantage of an extender is to give you the ability to lengthen or shorten the necklace or bracelet. The extender is often finished with a drop bead. Extender chains can be purchased separately, or you can make your own.

S-Hook and Hook-and-Eye

S-Hook **e** and Hook-and-Eye **f** clasps are similar to a lobster clasp because they need a ring to hook into and can be used with an extender chain.

Dexterity

A dexterity clasp **g** is another variation: one pinches the clasp to open the jaws, and then it hooks onto a ring. The clasp has a built in magnet to keep it closed.

Multistrand clasp

A multistrand clasp (**h, i, j**) is often required when there is more than one strand, or when there is a wide chain with two or more ending jump rings that need to be connected to a clasp. Each part of the clasp has two or more matching small loops. These loops connect with jump rings to the ends of the strands or columns. The two clasp parts are then connected in some way. Some slide together—such as a tube/slider clasp or a box clasp.



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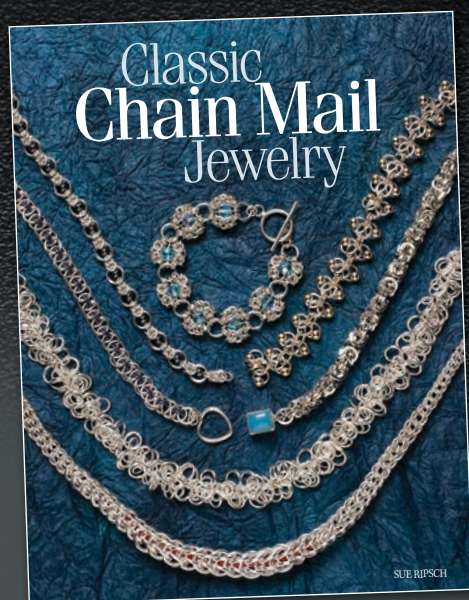
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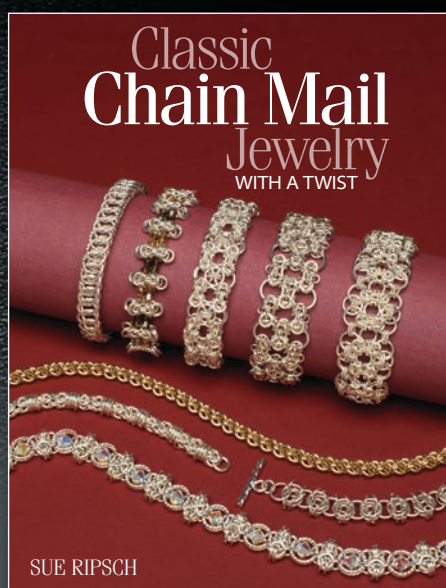


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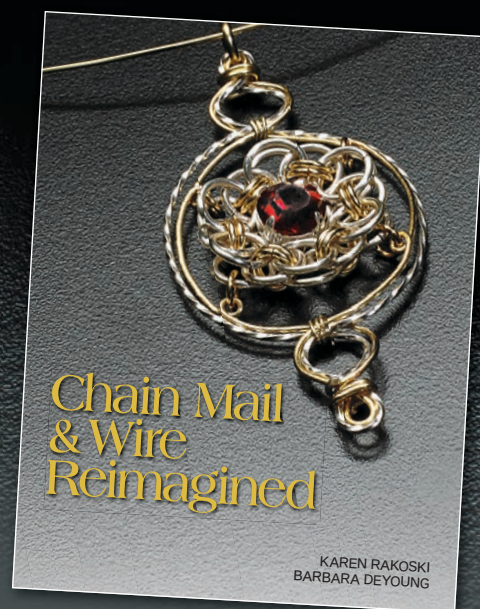
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